AN INVESTIGATION OF MULTIPLE NATURAL ORIGINS OF RELIGION

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DECLARATION

This thesis has been composed by me. The work is my own. The work has not been submitted for any other degree or professional qualification.

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CONTENTS

ABSTRACT

This study attempts to trace how religion could have originated in prehistory and antiquity, out of natural human and prehuman behaviour, without requiring the reality of the supernatural.

Religion is here defined as *beliefs, conceptions, practices and roles concerned with the putative supernatural.* A variety of manifestations or *elements* of religious belief and practice can be identified. It is proposed that *they have separate origins.* Examples of *religious elements* are: life after death, ghosts, sacrifice, priests, shamans, gods, demons, ... It is argued that to try to reduce religion to one original element is a mistake. There may be no single origin. But the individual elements have origins, and plausible theories can account for each.

Using theories and insights of previous workers, elaborated as necessary with information from a range of sciences, arguments are presented to account for five major foundational religious elements, thereby illustrating and partly fulfilling what is potentially a much wider programme. The elements covered are:

(1) Animatism: numina, daemons; (2) Animism: ghosts, souls;

(3) Another world: life after death; (4) Another world: heaven;

(5) Religious specialists: shamans.

Chapter 1 introduces the programme. Chapter 2 sets out definitions, philosophical principles and methodology.

Chapter 3 explores the specifically numinous quality which characterizes the supernatural in subjective experience. Chapter 4 describes brain structures and the neural substrate of experience. Chapter 5 proposes specific neurological hypotheses to account for certain types of numinous or 'supernatural' experience.

Chapter 6 deals with ape mentality, which may be presumed to characterize that of our remote ancestors, and identifies precursors of religious elements.

Chapters 7 - 11 deal with the possibly separate origin of five major religious elements, as listed above.

Chapter 12 summarizes the investigation, attempts to place the elements covered in sequence of their development in prehistory and antiquity, and expresses the limitations of the theory constructed.

NOTES ON ORGANIZATION AND TERMINOLOGY

The appendices are not essential to the argument but provide supporting or excursus material.

The appendices are extensions of specific chapters, and are identified accordingly. For example, Appendices 5A, 5B and 5C are appendices to Chapter 5.

In accordance with recent practice in palaeoanthropology, I have used the term 'hominin' to refer to creatures on the lineage which separated from chimpanzees and includes living human beings. Until recently, the commonly used term was 'hominid'. Reasons for the change in nomenclature are discussed in Appendix 6A.

I sometimes use the terms 'primal' and 'primitive' – of course without derogatory connotation – when referring to the people and cultures of tribal, pre-agricultural societies of recent centuries. I use the word 'primordial' to refer to Palaeolithic people or prehumans and their cultures known from prehistoric archaeology.

CHAPTER 1

INTRODUCTION

Preamble

The argument of my thesis is that a plausible case can be made for the origin of religious behaviours by natural means in the course of human evolution. To this end, my programme in what follows is to attempt to show how beliefs and practices of a religious or quasi-religious character may be explained as natural developments in prehistory, without recourse to divine intervention or other supernatural agency.

My argument does not *require* that the supernatural not exist or that a deity not exist, or that no divine intervention should have taken place in human history or prehistory. It is neutral on the truth of any given religion. When a Christian states that God 'sustains in being all that is', he or she does not imply that the laws of physics have no relevance in explaining the universe. Acceptance of the laws of physics and belief in the sustaining power of the deity are not mutually exclusive. Conversely, to seek a naturalistic explanation for the origins of religion is not to exclude the possibility that a given religious doctrine may correctly describe some aspects of reality, or to abrogate, if one possesses it, one's own religious faith. One can, of course, be a physicist and a priest (Polkinghorne 2000) or an evolutionary geneticist and a Christian (Finlay 2003).

Justification of the inquiry

Apes and humans

Apes do not have religion; we do. All recent human populations have had a form of religion (Lowie 1948: xvi; Malinowski 1948: 1). This means that, unless our common ancestor had religion and apes have since lost it, religion first appeared at some point during the evolution of human beings from the common ancestor of hominins and apes. My question is: how did the hominins get from a condition of no religion to a condition of having religion?

It is possible to imagine a world in which groups of people or of other sentient social creatures do not practise religion of any kind or hold any beliefs recognizable as religious. Such a world may have been that of our remote ancestors.

Other religions

Even if one accepts the truth of a given religion, for example Islam, and ascribes its origin to divine intervention in human history, there is still a need to account for the origin of other religions. If one accepts that, say, the Judeo-Christian tradition owes its origin to divine revelation, the need remains to explain the origin of other, incompatible religions in naturalistic terms. That is so unless they too are to be attributed to divine revelation, either the revelation of their own gods or a partial revelation by the deity of the Judeo-Christian tradition (*cf.* Parrinder 1954: 18).

Unless all religion is to be attributed to revelation, then there is scope to seek origins in naturalistic terms. In later chapters I seek to put forward at least the foundation of a naturalistic explanation of religion. A naturalistic explanation is one which is comprehensible in terms of physiology and psychology without requiring the reality of the supernatural.

A revelatory theory

If religion is never to be explained in naturalistic terms, then the origin of all religions must be attributed to divine agency. One might call this view a revelatory theory. Divine agency can be seen as additional to psychological and physiological agency. The principle of parsimony, that a more parsimonious explanation is to be preferred where possible, is widely accepted in science. It is known to philosophers as *Occam's razor.* In accordance with that principle, the onus of proof would appear to rest upon those who would espouse a revelatory theory. It would be up to them to show that divine agency in prehistory brought about the earliest religions.

On the revelatory view, how would religion originate? Would there be a theophany, followed by an astonished obeisance? At what stage in human evolution did it occur? What kind of human or prehuman was the first to receive such a theophany? The revelatory view is not by any means to be dismissed out of hand, but those questions indicate that it would be hard to research. It is not within my present objectives to pursue it further.

It seems to me legitimate to seek an origin of religion which does not involve divine intervention, if only to see how satisfactorily naturalistic explanations can account for the phenomena of religious behaviour.

Feasibility

According to Evans-Pritchard (1965: 104, 111), it is unscientific to search for the origins of religion, 'especially when they cannot be found'. He says, for example, 'The ideas of soul and spirit could have arisen in the way Tylor supposed, but there is no evidence that they did' (1965: 25). It is not clear what would count as evidence in such a case. My point is that it is worthwhile to have a theory.

If there is to be no theory of the origins of religion, then there is a vacuity in this area of anthropology and theology of a kind not tolerated elsewhere in human inquiry, even in the case of unique, unrepeatable and experimentally unobservable events. For example, there is no lack of theories about the origin of the universe. In history, there is no lack of theories about Prince Charles Edward Stuart, his military expertise, personal courage or lack of these.

In my view, evidence can be found. Information and insights from a number of disciplines, such as archaeology, anthropology, primatology and psychology, can be used to search for it.

Evans-Pritchard (1965: 16, 108, 112) criticizes early theorists such as Tylor, Frazer, Lang and Marett, who attempted to investigate primitive religions and inquire into the origins of religion without leaving their armchairs. A given primal religion cannot be understood without the context of the social structures within which it is practised. But the early theorists did not attempt to describe given primitive or primal religions without reading the reports of field researchers. Even a field ethnographer, if he or she wishes to extend an interpretation beyond an immediate target society, has to depend upon other researchers, because in a single lifetime no one can study at first hand every primal society, even the few remaining in the modern world. And even Evans-Pritchard (1965: 114) seems to acknowledge that merely accumulating descriptive studies of the religions of particular preliterate peoples is a little tedious.

What I believe Marett, Tylor and others were ultimately interested in, and what I am interested in, is not to know the part which religion plays in the life of any given people today, but how religion came about in the first place.

In the nineteenth and early twentieth century, study of current and recent stone-age peoples brought to light primal religions with different and apparently

defining characteristics, such as totemism, ancestor worship and the like. As these characteristics were to be found differentially among peoples with more or less developed levels of material culture, it was possible to believe that the identified characteristics were indicators of historical stages of religious development proceeding in parallel with material development. It seemed that the stages could be put in order chronologically from less evolved to more evolved. In this way, some believed, it would be possible to determine the form of the least developed and therefore earliest religion (*e.g.,* Schmidt 1931). Nowadays, the correlation of religious characteristics to levels of material culture and the assessment of evolutionary stages is treated as discredited, and the enterprise has been abandoned. No amount of field research among primitives is going to deliver the answer to the question of the origin of religion (Evans-Pritchard 1965: 104).

The above conclusion should not be surprising. No recent stone-age society exhibits the earliest stage of human development. Every human society today, whether in the 'developed' or 'developing' world, stands equally at the end of a long line of cultural development from a more primitive condition, in the end stemming from the presumably simian culture of the common ancestor of hominins and African apes, maybe six million years ago.

We cannot study the origins of religion first hand. We cannot even study the religion of past historical people first hand, although we may have their written documents. With only archaeological evidence, the religion of prehistoric people is even more problematical to estimate. We cannot know the mentality or mental capacities of early humans or prehumans, who may have been the first to conceive religion, and our speculations are constrained by this ignorance (Lang 1898: 62, 64).

Even so, the study of religious concepts among recent tribal people has relevance to the search for religious origins: for the following obvious and almost traditional reason, which I make explicit. Recent stone-age societies evidently have not changed so much as present literate or industrialized nations in the course of the last thirty thousand years. They remain in a hunter-gatherer state of subsistence similar to that which archaeological evidence indicates was once the way of life of prehistoric peoples around the globe. Their geographical and cultural environments are limited and therefore the scope of their thought limited – or liberated – in the

same sort of way as we may presume for prehistoric societies. It seems, therefore, a reasonable assumption that their religions may be more similar than those of complex literate western or oriental cultures to the religions which mankind may have practised five, ten, twenty or thirty thousand years ago.

Customs and beliefs in stone-age societies do not necessarily remain static for long periods. The extinct Tasmanian people had a history, and their final culture is not to be equated with that of the original Palaeolithic immigrants (Lowie 1948: 125). Among aboriginal tribes of central Australia, the initiatory practice of subincision was not established from remote antiquity but apparently spread from the south east of the continent within recent centuries (Berndt 1951: 16). The world views of African traditional cultures are not static and timeless. Religious innovation within continuing traditional world views has been documented by field workers in Africa over a period of decades, and no doubt went on in past centuries, although in oral tradition innovators and their new ideas tend to be relegated to the 'time of the beginnings' (Horton 1993: 313).

Provided that one does not treat any given recent tribal religion as if it can stand for study as an unchanged relic of the past, one may hope to derive some insight into the form which religion might have taken in tribal societies of prehistory.

If there appear to be similarities in the religious ideas and practices of geographically separated tribal peoples, these especially are noteworthy. If they are really similarities, then they are significant as indicating something about the past: conceivably communication between prehistoric peoples, and either a common origin of the religious behaviour with adoption of it by those peoples who did not invent it, or separate origins of similar ideas. The latter especially, but also the former, would suggest that the ideas and motives behind the religious behaviour are of a very fundamental nature.

Religion, magic and the supernatural

What I call 'religion and magic' is essentially the same as that which Frazer covered by the same phrase in *The Golden Bough* (Frazer 1922). I mean ideas, beliefs and practices, and roles undertaken by persons, concerning what is thought to be supernatural. Putative supernatural forces and beings include gods and spirits and

occult powers such as blessings and curses. While the supernatural excludes social practices such as visiting the sick and promoting a faith by preaching, it includes matters which are central to religion and often the focus of preaching, such as prayer and life after death.

To generalize, the supernatural seems to be a matter of agencies, usually invisible, intermittently acting, personal and sentient, which can exert invisible forces quite distinct from any other, commonly experienced, invisible force such as gravity. For example, the sentient agents may be living human beings in the role of priests or witches, or may themselves be invisible, in the form of ghosts or gods.

Religion and magic form a compendium of ideas, beliefs, activities and roles concerned with these forces. Table 1.1 lists various religious and magical elements: those ideas, beliefs, activities and roles.

Spirit	Ghosts	Mediumship
Gods	Angels	Demons
Visions	Prophecy	Divination
Ritual	Hymns	Blessing
Witchcraft	Spells	Curses
Life after death	Reincarnation	Resurrection
Ecstatic journey	Underworld	Heaven
Prayer	Sacrifice	Communion
Myth	Tradition	Theology
Priest	Shaman	Theologian

Table 1.1

As will become clearer, I do not make much distinction between religion and magic, as both have to do with the supernatural. I use the word 'religion' to cover both.

The supernatural and rationality

It can be seen from Table 1.1 that the supernatural is practically definable as the collection of alleged phenomena which are generally regarded as not amenable to explanation in the terms of normal physics, chemistry, biology or psychology.

Theology, while it may be the queen of sciences, generally does not seek to explain the objects of its study in terms of natural science, but rather is a discipline which accepts a world view including supernatural elements as a starting point and operates with conventions of its own.

Religion, magic and the supernatural are generally seen as in some way outside of science and the scientific or even common-sense approach to understanding the world. That observation alone might provoke the question as to how religion came about. It may be puzzling enough that people today believe things which seem to run counter to a common-sense or rational outlook on the world (*cf.* Bergson 1935: 103). In the case of early humans or prehumans, however, one would presume on a *prima facie* basis that for daily survival they would have been obliged to be practical in their approach to activities such as food-gathering and self-defence, and careful to conserve resources, including their own time and energy. *A fortiori,* why did they begin to have beliefs, say about spirits, which, from a rationalist standpoint, would get in the way of a realistic view of their surroundings? Why did they begin to carry out practices, such as perhaps hunting magic, which would appear to most of us inefficacious and therefore a waste of time and energy?

In so far as it is not amenable to scientific investigation, religion may be seen as irrational or non-rational. In the religious sphere of their life, people hold beliefs and act upon those beliefs, apparently without requiring the usual kind of evidence, from their senses and from demonstration, regarding the existence of the alleged agencies which are the object of those beliefs and actions.

When people pray, they believe that there is a sentient being to which they pray. Normally we do not attempt to address a person unless we can see the interlocutor, or we believe him or her to be behind an obstruction, or we are using a telecommunication device. When someone dies, we expect the cause to be old age, illness or injury. If there is any doubt about the cause, we expect a physician to investigate the possibility of infection, poison, a cancer or some other biological condition. If someone said that witchcraft could be responsible for the death of a very old person, most of us today (*pace* Evans-Pritchard 1965: 110) would not think that suggestion helpful for understanding or worth following up.

A world view which includes an existent supernatural realm allows for more beings and forces than one which is limited to the objects of western scientific explanation. For example, a world view which includes witchcraft as a possible explanation for various phenomena requires the existence of personal or impersonal unseen forces, not measurable by scientific instruments, or at least so far unmeasured, and possibly of invisible, more or less intelligent and wilful personal beings such as demons. One imagines that a person who espouses such a world view would not reject the reality of electromagnetic forces and gravity, oxidation of metals, the carriage of malaria in infected blood by mosquitoes or any of the other discoveries and theories about the world produced by science. So witchcraft is an *addition* to everything science has to offer.

The problem with a world view which includes witchcraft is that, if scientific explanations can account for all the phenomena, there is no need to posit this *extra* realm of forces and beings. The principle of parsimony can be applied with a view to pruning all world views including elements of the supernatural, unless the supernatural elements provide explanations where science does not. If there occur phenomena which are not accounted for by science but are accounted for by a supernatural explanation, then it makes sense – that is, it is rational – to accept, at least provisionally, the supernatural explanation. Here of course one excludes fraudulent phenomena, such as some cases from the annals of spiritualism.

There is much that science has not explained: for example, how electromagnetic radiation manifests in some observations as particles and in others as waves. But such unknowns in science have not been addressed, to my knowledge, by hypotheses involving the supernatural. Astrologers do not attempt to bring insights from their body of theory to bear on calculating the mass of Jupiter. New-age druids do not offer to elucidate the chemical composition of the standing stones at Avebury. Theories of the supernatural tend to have their own allegedly supernatural phenomena to deal with, such as second sight or answered prayer, rather than seek to deal with questions from the everyday world, such as how to recognise fatty foods, or questions from science, such as what conditions within a cell prompt mitosis or meiosis. World views admitting the existence of the supernatural, therefore, tend always to include it as an *addition*.

If a phenomenon generally accounted for by hypotheses of the supernatural can be explained in terms which do not involve the supernatural, then it is rational, in accordance with Occam's razor, to eliminate the supernatural from our repertoire of hypotheses in respect of that phenomenon. For example, if a subject's hearing disembodied voices can be explained in terms of hallucination, then it is rational to discard the hypothesis that a demon is addressing the subject. In other words, unless one rejects the concept of hallucination, the demonic hypothesis becomes *additional* to an adequate explanation and therefore superfluous.

I do not claim that all allegedly supernatural phenomena have been explained by science or necessarily can be explained by science, even in principle. Moreover, even if a phenomenon is explicable equally by supernatural agency or by natural agency, its explicability by natural means is not a guarantee that natural agency is the *correct* explanation. It would be rational, on the basis of Occam's razor, to believe that it is and proceed as if it is, but a supernatural agency could not be finally ruled out purely on the ground of explicability by natural means.

Interesting though the above considerations are in their own right, for my present purposes, the trend of those considerations is to lead back to the following question. If belief in the supernatural is essentially irrational, if it requires the assumption of an extra realm of being besides the physical or natural, if to us today it seems that most, if not all, phenomena in the world are explicable without requiring supernatural causes, then what prompted our prehistoric ancestors to begin practising religion and magic?

The function of religion

Even the religions of classical antiquity, let alone those of the present, represent late and complex stages of religious development. Study of them would not cast much light on their origins, or, rather, on the origin of the religious forms which preceded them.

For my purpose it would not be fruitful to look at the function of religion in modern society or at the forms which religion takes in modern society. The function of a Christian church in the perception of members of its community may be, among other things, to provide social gatherings, offer shared worship and encourage

personal experience of Jesus Christ. There will be a diversity of functions appealing to different people.

The function of a religion in its society at a given period of history and in a given locality may not be the same as the function which it had in an earlier period or in a different place. Politically, the function of the Church of England today is different from its function at the time of the English Reformation. In West Central Scotland, being a Roman Catholic or a Protestant defines one's allegiances within the local community more markedly than would be the case in South Africa.

Frazer, before him Tylor, and after him Durkheim, Freud and others attempted to expose the common features of religious and magical practices and beliefs, to explain the function of religion and magic for individuals and societies, and in some cases to elucidate how religion and magic might have come about. My concern here is not the interesting features or even the function which religion or magic may serve in any given society, current, historical or prehistoric. I am concerned *only* to try to show how religion and magic might have come about. Features, even common features, of religions, and functions which religion or magic serve are of interest only in showing how religion and magic might have originated.

What is included in religion

A variety of definitions of religion have been proposed. Some classical examples follow. For Tylor, a belief in spiritual beings counts as a minimal definition of religion (1871, I: 424). According to Marett (1914: 1), an attitude of supernaturalism among primitive peoples provides religion with its raw material. Frazer regards religion, in contrast to magic, as a theory which assumes that the course of nature is determined by conscious agents (1922: 54). Durkheim defines religion as 'a unified set of beliefs and practices related to sacred things, that is to say, things set apart and forbidden – beliefs and practices which united into one single moral community ... all those who adhere to them' (1915: 47), and at the same time, by a *tour de force* of continental metaphysics, 'a system of ideas by means of which people represent to themselves the society of which they are members and the opaque but intimate relations they have in it' (1915: 323). Geertz says (1973: 90) that a religion is a system of symbols which establishes moods and motivations in people by offering theories of a general order of existence and giving

those theories such an aura of truth that the moods and motivations seem uniquely realistic. More recently, Stone (2001: 177) has defined religion as 'a system of practices rationalized by beliefs according to which the practices place the practitioner in a relation-of-value to a supramundane reality so grand that it can figure centrally in the satisfaction of human needs'. In Chapter 3, I shall show that the grandeur implicated in this last definition, while applicable to some religions, is inapplicable to others.

My own approach reverts to Tylor and Marett. Such an approach has of course been criticized, for example, by Durkheim (1915: 24-29). Durkheim's theories in turn have been severely criticized: for example, by Richard (1923: 228-276) and Lowie (1948: 153-163).

A *given religion* can perhaps be defined in terms of its own content – on my terminology (see below), which elements it contains and how they are manifested. I take *religion in general* to be the body of those ideas, beliefs, practices and roles that are concerned with the supernatural. I then seek a non-supernatural – that is, naturalistic – origin for some of those ideas, beliefs, practices and roles. I propose that a non-supernatural origin can probably also be found for those which I do not have the resource to cover in the present work.

Because I define religion as having to do with the supernatural, it is open to a critic to say (1) that really there are elements of religion other than those concerned with the supernatural, or even (2) that religion is primarily concerned with matters other than the supernatural. I would certainly disagree with (2) and would consider, regarding (1), that the non-supernatural components of religion, if there are such, are less critical or fundamental to religion than the supernatural ones. I would argue, had I the resource to expend on it here, that matters which I would expect to be alleged to be non-supernatural aspects of religion are not essentially religious but social or traditional matters (*cf.* Malinowski 1948: 41). For example, marriage, circumcision, and a communal meal attended by a church's alpha group are cultural traditions or social events. Such things are not essentially components of religion, just as the Biblical prohibitions against yoking together a horse and an ass or against wearing a garment of hemp mixed with flax are social rather than essentially religious matters (Durkheim 1915: 34). When the football crowd sing in communal harmony, that is

not religion. When a Celtic player crosses himself before running out onto the pitch, that is religion.

If the reader is unable to accept that the body of ideas, beliefs, practices and roles concerned with the supernatural is coterminous with all or most of religion, then I ask him or her to bear with me and mentally substitute such phrases as 'ideas, beliefs, practices and roles concerned with the supernatural' and 'the supernatural', appropriately as occasion demands, for my term 'religion' in most of what follows. At worst, I arbitrarily define religion as above. If, according to a different judgement, there are components of religion other than those concerned with the supernatural, then, as I do not seek to account for the origin of those, I shall have failed to offer an account of the origins of religion by naturalistic means: my account will have been insufficiently comprehensive. I have to accept that this may be so. I therefore ask the reader to accept the parameters, clearly stated above, of what I seek to do, and judge what follows within those parameters.

Religious elements and their separate origins

Religion has the appearance of a 'complex and multifarious growth – a forest rather than a tree' (Marett 1914: 36). I propose that religious behaviour and religious concepts are not homogeneous, but that there are a variety of distinct manifestations or *elements* of religious belief and practice, and that these have separate origins.

A given religion may manifest, for example, perhaps along with many others, these three elements or components: inspiration and prophecy, sacrifice, and a belief in personal survival after death. Those three elements of religious phenomena are not, I believe, necessarily concomitant. They may be found together at a given period, say, at the present day or in the ancient classical world, and form part of a given coherent religious complex at that time, for example early classical Greek religion or classical Judaism. However, I contend that they could have arisen separately. If this were not so, then we would have to suppose that at a certain moment the religious complex of which these three form part sprang into practice all at once, as it were ready made.

Consider again Table 1.1. It may be that as religions develop, they include or omit elements from preexisting religions or supernatural practices. For example,

Islam includes such elements as sacrifice and life after death, and omits reincarnation, all of which elements were extant in other religions prior to the time of the Prophet. In effect, the selection of elements to be included within Islam was defined historically by the Prophet and his immediate followers. In the case of older religions such as Judaism, whose origin is not so clearly documented or so clearly assignable to a limited historical period, components may have accreted to or have been dropped from the complex over the centuries of its development. For example, as a case of historically evident change, sacrificial burnt offerings were central to the Jewish religion in the centuries before the Diaspora, yet have remained discontinued since the destruction of the Temple.

My proposition is that religious elements such as belief in life after death, sacrificial offerings, mediumship, prophecy and the like each could have appeared at different times in prehistory and could each have been prompted by different causes.

The religious elements – the ideas and beliefs, the practices, the roles taken on by practitioners – are, I contend, human inventions which occurred in the course of prehistory and antiquity. They are responses to common experiences and predicaments in human or even prehuman hominin life. They did not all come into being at once, forming any sort of complex, but rather at different times as humans or prehumans made their responses to certain experiences when those experiences were new. One suspects that only at a late stage of prehistory – but prehistory rather than history – did human beings at any locality attempt to codify or turn into a coherent complex the mixed bag of those religious elements which a given community carried with them out of their savage past.

I do not say that the elements are always discrete. Some shade into others: souls, daemons and gods are all spiritual beings. Some elements influence the development of others: experience of what seems to be another world influences how the soul and personal survival after death are envisaged.

In seeking the origins of religion, it is not necessary to account for its later developments. Later developments of a given religion may have very little in common with the original forms of belief and practice in the same religious tradition, let alone with what prevailed in prehistory. For example, modern Christianity exists in many forms, from Irish Catholicism and Armenian monasticism to the

fundamentalism of the American Bible Belt. The development of these diverse forms can be traced and explained historically by those equipped to do so. The origin of an entire religion can in some cases be clearly traced. For example, the origins of Islam in Arabia in the seventh century CE are fairly well understood, as are the origins of Mormonism in the nineteenth century.

Only the origins of certain basic elements are within the scope of my investigation. Once certain elements came into being – that is, once people started to believe certain things or carry out certain actions which we can count to be of a religious nature – then the material was present for future development by modifying, expanding and combining those elements. It may be that throughout the later millennia of prehistory people adapted and augmented the initial elements and added others, so that the religious dimension of life passed through a number of phases and developments. Some developments probably were dead ends, the practices abandoned or the adherents exterminated; others became the main streams and ultimately produced the historical world religions (*cf.* Tylor 1871, I: 426).

According to Frazer (1922), mankind has passed through three broad phases of thought: the magical, the religious and the scientific. Evidence to distinguish these phases or place them in temporal succession seems to be slight or nonexistent (Lang 1901: 46-75), and no one would try to justify them now (Evans-Pritchard 1965: 28). They are not material to my thesis and I do not try to defend them. In Chapter 12, however, I do try to assign a temporal order to what, on *prima facie* grounds, seem to be the earliest religious elements.

Plan of the rest of the thesis

Background

There have been many theorists on the origin of religion. I have not chosen to make a critique of one theory and then another, which would be a largely historical enterprise. This is not an historical inquiry about what Tylor, Durkheim or any other writer may have said or intended to say. It is an attempt to put forward a plausible theory of the origins of religion.

In learning a science, one is not taught the succession of theories in the field from the ancient Greeks onward, but rather is taught the conclusions accepted at the

present day, usually without much historical reference to the discoverers of the phenomena or theories presented. This way one becomes proficient in doing that science. It may be that those who are familiar with the historical dimension of science are better able to contribute new ideas (Feyerabend 1975). However, to be an effective practitioner one must deal with current theories in their own right as principally modes of understanding the world rather than with a range of alternative theories as primarily the creations of historical, criticizable individuals. Practitioners of physics do not worry about what Einstein or Heisenberg actually said or what they may have intended by some of their pronouncements. Physicists use those authorities' theories as they have been taught, without feeling a need to go back to original sources (Polkinghorne 1998: 87).

I make use of my authorities in the same spirit, to put together my own case, although I do cite original sources closely. This I conceive as an approach most likely to produce interesting results. I take what I can from those writers who have had valuable insights.

So far I have not found any writer whose theory accounts satisfactorily for the origins of religion as such, the whole of primitive religious belief and practice. Some writers have appeared to believe that their theories were more or less satisfactory theories of the origin of religion (Tylor 1871, I: 426-428; Marett 1914: iii, ix, xi; Guthrie 1993: 3, 7, 201). The problem is not that the theories are unconvincing, or that the criticism levelled by other authorities really in all cases stands up. The problem for each theory, in claiming to be a theory of the origin of religion, is one of scope, because religion is not one thing.

Religion in the abstract is a collection of elements, as described above. It is a collection of ideas and practices which have been selected and combined by individuals or groups of individuals at divers times to produce different actual religions and their offshoot sects, heresies and new religions. Some historical religions have manifested some elements at one time and not at another time. Some groups adhering to a given religion include elements in their belief or practice which another denomination or sect would exclude. For example, gods are included in popular as opposed to philosophical Buddhism; deceased saints who can intercede are included in Roman Catholic as opposed to Protestant Christianity.

I do indeed think some of the theories of religious origins are convincing. They are convincing theories of the origin of *one or more elements.* That is enough to be an impressive achievement. For, once a few major elements are seen to be explicable in naturalistic terms, it becomes credible that the rest may turn out on further investigation to be either independently explicable in naturalistic terms, or even derivable from those elements already explained.

Approach to the subject

My approach to the subject is straightforward and perhaps old-fashioned, because I think that approach is correct. It is different from the approaches of most recent well known scholars, with the exception of Guthrie. What I believe I am doing is, in a wide sense, philosophy of religion, and I start from a philosophical standpoint.

Although much of what follows is concerned with and makes use of anthropology, I do not follow its customary methods. Throughout I have avoided the use of such words as 'cognitive' and 'symbolic', which are *de rigueur* in recent literature. In fact, I have avoided abstractions so far as possible. What characterizes my approach is the practice, or at least intention, of limiting description and analysis to what individual people do or could do, and to what happens or could happen to individual people. As a result, my approach will seem concrete to the point of crudity to those accustomed to read, for example, Lévi-Strauss, Boyer or Rappaport. My sense is that abstract theories become removed from what really happens in individual lives, because abstract language has a tendency to take on a life of its own.[1] At their worst, they are examples of the triumph of system over facts and explanation. The criticisms by the down-to-earth Radin (1938, 1953) of his predecessors and contemporaries Levy-Bruhl, Durkheim, Róheim and others can be applied *mutatis mutandis* to their symbolically minded successors.

The interpretation of religion as an enterprise more akin to art and aesthetics than to science is unconvincing. On this view, religious discourse is often seen as not meaning what on the surface it would appear to mean but as symbolizing attitudes to

[1] My last sentence is itself an example of this tendency. It is people who allow themselves to spin abstract language; language is nothing without individual people to use it.

society. Symbolist theories have been, in my view, successfully criticized by Horton (1993: 53-160) and Guthrie (1993: 26-34).

My study has to start from a standpoint which I believe in. Essentially, I take a literalist view of religion. When people say there are ghosts and spirits, they mean that there are ghosts and spirits, which are usually invisible, more or less intelligent, more or less autonomous agents in the world, agents of a supernatural character. In the interest of making progress with the real positive task as I conceive it, I shall devote very little space to negative criticism of theories with which I disagree.

Frequently I cite old authors, mostly from the half century prior to the Second World War, whom most workers now would regard as passé. This is because, firstly, the subject of religious origins was largely neglected from that time up to the 1990s. Secondly, I make use of previous insights whatever their era, and try to credit their originators. Thirdly, the writing of the pioneers is clear, succinct and rich with ideas.

The principles of my approach are discussed in more detail in Chapter 2.

Plan

It would be a lifetime's work to set out such a theory as I propose and to make the case in full. My programme therefore is more limited. I cannot expect to produce a huge opus giving every detail and anticipating every counterargument. I can, however, make a case about the origin of religion which will be intelligible and perhaps convincing in its own right, and which could be used as a basis for further research.

Guthrie (1993) traces the origin of religion to anthropomorphism, Freud (1933) to the Oedipus complex and a primordial totem feast, Tylor (1871) to the dream-image of dead or absent persons. Others have identified what they believe to be primordial practices associated with menstruation and deception of males by coalitions of females, which were of selective value (Knight and Powers 1998). The nature of the origin ascribed is related to the defining nature of religion as the writer in question conceives religion to be.

However, I think the idea of a single defining factor is a chimera. In my view it is a mistake to try to reduce religion to one element or to seek the origin of all religious phenomena or elements in the origin of one. There is no single system and

there are many elements. There may be no single origin. But the individual elements will have origins, and those separate origins can profitably be sought and probably can be found; or at least plausible theories can be developed to account for the presence in history of those religious elements.

To account for each religious element by natural means, I use as a basis a theory already promulgated by one or more authorities which comes close to fulfilling the requirement. I elaborate the theory as I see the need. There is of course overlap between elements, for example, between spirit beings and souls; and the possible developments of one element in relation to others, particularly proximal ones like spirit beings and souls, will be discussed.

Owing to limitations of time and resource, I shall attempt to cover only five of the elements from the list which I presented in an earlier section. However, those which I propose to deal with are precisely those I believe to be central to religion, as it were core or foundational elements. I see these as actually defining what religion is about and including or possibly giving rise to some of the others.

I deal with the elements listed below.

- Animatism: personifications, daemons (Chapter 7)
- Animism: souls, ghosts (Chapter 8)
- Another world: life after death (Chapter 9)
- Another world: heaven (Chapter 10)
- Religious innovators: shamans, priests (Chapter 11)

Among the notable elements missing from my plan are those pertaining to gods, myth and sacrifice. These three are absent not because they are unimportant but because one has to stop somewhere, and the chapters on the five which I do cover will sufficiently illustrate the programme.

Chapter 2 sets out definitions and principles, expanding on the methodology described in this introduction.

Chapter 3 describes the specifically religious or numinous quality which defines the supernatural in subjective experience. Chapter 4 describes the neural substrate underlying experience and Chapter 5 proposes neuropsychological hypotheses to account for certain types of religious, supernatural and paranormal experience.

Religion originated in prehistory, at some time between the separation of the population which would give rise to humans from the stock of the apes, and the time of the earliest literate civilizations. Chapter 6 therefore deals with the nature of ape mentality, which may be presumed to characterize that of our remote ancestors. This is to clarify what basis there was at a remote period for the development of religious conceptions.

Chapters 7 - 11 deal with the possibly separate origin of five core religious elements, as listed above.

Chapter 12 summarizes the investigation, attempts to draw conclusions, and expresses the limitations of the theory thus constructed.

Exclusions

As might be expected given my title, at the outset I intended to cover in some detail what appears to be the earliest clear evidence of religious behaviour: the Palaeolithic burials of Eurasia and the parietal and mobiliary art of the European Upper Palaeolithic. However, in dealing with the generation of specific religious elements out of a milieu of their absence, I have expended all available space. With the exception of *heaven,* all the religious elements dealt with could have come into being during or before the Upper Palaeolithic. Some discussion of the bearing of the Upper Palaeolithic evidence is given in Chapters 9, 10 and 11.

No claim can be made of comprehensive treatment. A huge swathe of religious and quasi-religious ideas, not obviously connected with the elements which *are* treated, is omitted. These include the 'spiritual' quality of striking events in nature such as the migration of birds, and the esteem accorded in tribal and ancient societies to game animals and even to nourishing plants.

An unfinished research programme

My purpose is to show that a naturalistic account can be given of the origin of religious elements. I demonstrate that a theory is possible by constructing one. Given the main plank of the theory, that religious elements are separate, the rest is less a theory than a large research programme of which I have covered some strands, dealing with certain religious elements, but have not the time or space to cover others. There is also a lack of specificity in some areas. One of these is neurology,

where there are deficiencies both in my lay understanding and in the degree to which neurology itself is able at present to account for phenomena in detail.

CHAPTER 2

PRINCIPLES AND PARAMETERS

A rationalist approach

Sympathetic description of beliefs

Shiels (1978: 714), regarding a belief of the Andamanese about souls, baldly tells us, 'The ot-jumulo leaves the body commonly during sleep'. In contrast, I would have to say, 'Well, no, it doesn't. The ot-jumulo does not leave the body during sleep, because there is no ot-jumulo!'

I do not know whether Shiels thought there was an *ot-jumulo,* and this discussion is not a criticism of him. It is a convention in cultural anthropology to write baldly and sympathetically as if one accepts the beliefs of the people studied as true. This is the *emic,* as opposed to *etic,* approach (*cf.* Carlsen and Prechtel 1994: 78-79). The sympathies of some writers on shamanism are positively romantic (e.g., Wasson 1968, Furst 1994 and contributors to Furst 1997). A striking exception is presented by certain Russian scholars trained in the Soviet era. For example, Alexeev (1990) repeatedly uses quotation marks round phrases which indicate the supposed activities of shamans: 'Curiously, the shaman "descended" into the ocean ...'; 'Yakut shamans displayed "miracles" ...'; 'Shamans, "fighting" with the spirit that was "possessing" the patient ...'. This author was producing an explicit atheist Marxist-Leninist analysis (Alexeev 1990: 108).

While a sympathy with a target culture is usual, and perhaps necessary if the fullest understanding of that culture is to be attained, it would be extraordinary if ethnographers seriously assented to the beliefs of a people under study. If they did, they would be taking on board a whole raft of ideas foreign to those of their native society, such as beliefs in shamanic flight, a multiplicity of deities or a variety of disembodied spirits, all of which would surprise their friends and colleagues. There are enormous ontological ramifications to acceptance of the supernatural, as discussed in Chapter 1.

An intellectual demand would have to be made that the researcher square his or her nativist beliefs with the western scientific knowledge (or alleged knowledge),

and perhaps religious dogma, which he or she espouses when back home. Evans-Pritchard (1937: 11-12, 226) tells us that, among the Azande, witchcraft is regarded as a substance which, when it moves at night, can be seen as fire passing along a path. Such a belief invites questions about what exactly is emitting the fire-like light; and, if the source of the light is a process of combustion, what substance is being combined with oxygen. As for the belief in spirits among the Azande, that invites questions regarding the place in nature of the spirits, and in what manner they, as non-material objects, interact with material substances which at other times appear to act in accordance with the laws of physics. If one is a Christian, the further question arises: how do the spirits figure in an ontology consistent with scripture or with redemptive theology?

To be sure, tribal people who profess traditional beliefs may assent to them, but they are still not true. We do not subscribe to the Arunta legend, reported by Spencer and Gillen (1899), that 'the two brothers' created a lake in central Australia, but believe that it was created by geological processes. Does the ball game of the Hopi Indians help the corn to grow? (Lowie 1948). In those connections the hypotheses involving the brothers and the ball game are mistaken or superfluous.

Some beliefs make sense in the world outlook of a given tribal society. Yet tribal people readily give up traditional beliefs when western commerce comes to their country (Herdt 1994: xv). In the middle of the twentieth century, the aboriginals of Australia largely gave up the beliefs transmitted from their own culture, as did the American Indians. More recently, there has been a resurgence of traditional beliefs in Australia and North America. I suspect this resurgence owes more to western new-age influences – despised by Soviet workers (Basilov 1990: 46; Furst 1994: 3-4) – than to continuity of transmission from tribal elders.

Statements of the bald form regarding the beliefs of other cultures have to be taken as shorthand for the same phrasing prefixed by some proviso such as 'They believe that …'. In the instance with which I opened this chapter, it would be correct to say, 'The Andamanese traditionally believed that the *ot-jumulo* leaves the body …', or, more accurately, 'An informant among a particular tribe of Andamanese once told an ethnographer that the *ot-jumulo* leaves the body …'. To be more

accurate still, one has to know what role the informant played in society (Chapter 11; Radin 1938).

The reason I emphasize this point is that I suspect there is a danger of becoming too sympathetic and too bound up with the 'internal logic' of beliefs in a target culture. The ethnographer can become possessive about his or her 'pet' people and defensive about their culture (La Barre 1972: 48, 52).

Recent literature about shamanism is replete with sympathetic treatments and generalizations, and grades easily from scholarship to new-age romanticism. For example, Sullivan's (1994) paper on shamanism is a highly interpretative and sometimes lyrical generalization from ethnographic accounts and previous generalizations. It is not itself an objective, observational ethnographic account of publicly visible shamanic activities. Nor is it a first-person interpretative account of shamanic activities by a shaman who believes in what he or she does. For the most part, it is written from a point of view in which the supernatural character of the shamanic activity is taken for granted. It even opens with the provocative sentence 'During ecstasy, the human soul leaves the body'. I am not criticizing Sullivan, because his is of course far from the only account of shamanism written in this mode. Eliade (1964) and Ripinsky-Naxon (1993) do the same.

The point I am making is as follows. Writings in this mode are neither authentic interpretations of *their* shamanism by shamans nor objective accounts of what specific shamans have done. They are generalizations from accounts of many different, though admittedly similar, manifestations. And they are laden with *western* interpretation at a level of transcultural generalization inaccessible to a tribal shaman. This would not be problematical, except that, even in the hands of scholars, western interpretation often does not confine itself to what is objectively observable. Instead, to combine metaphors of Radin (1938: 92, 197), we are wafted off on ethereal wings to sublime romanticism. It was, I think, Eliade's (1964: 223, 400-401, 477) romantic view of shamanism that induced him to believe that the shamanic use of hallucinogens reported from Siberia represented degeneration from a presumed pure, drug-free, archaic practice of ecstasy. In this he appears to have been mistaken, as he later acknowledged (Chapter 10 below).

If one is exploring and documenting a foreign culture, then no doubt one has to suspend disbelief and try to get inside the culture so that one can understand the functions and relations of its practices and ideas. The same is true of understanding an ancient culture. However, through accumulated scholarship in a variety of fields, we have access to external information not available to people *inside* a given ancient or local culture. We are therefore in a position to uncover the relations between a target culture and its surrounding and preceding cultures, for example between the culture of early Israel and that of the Canaanites. For full understanding we cannot ignore that external information (Wyatt 1996: 7-8). Throughout, therefore, I adopt an etic perspective.

An even worse scenario than an excess of sympathy is one in which metaphors and imageries used in interpretation of a cultural phenomenon, such as totemism, get out of hand in the investigator's determination to find *system.* Stanner (1960: 122) complains: 'We start with "structure" and before long are dealing with "tensions" and "stress" and "centrifugal and centripetal forces". ... a useful idea leads to the growth of an interpretative system of metaphors... .' Thus interpretative structures grow into a kind of speculative metaphysics. One thinks of Durkheim and Levi-Strauss (*cf.* the critique of functionalism and structuralism by Munz 1993).

Interpretative anthropological accounts, in proportion as they are generalized from many instances and subjective, importing concepts from a preconceived system, seem to become detached from the reality on the ground. Such accounts have been criticized by Sperber (1996). In particular, he draws attention to speculative interpretations of beliefs which 'the believers themselves [in the target culture] are incapable of articulating', interpretations of 'collective mentalities', and the attribution to a whole social group of 'collective representations which need never be entertained, let alone expressed, by any one individual member of the group'. He regards these as deficient scientifically because there is no way of evaluating the faithfulness of such interpretations (Sperber 1996: 35, 41).

The customary interpretative methods of anthropology have also been criticized by Greenfield (2000), who contrasts anthropology with experimental psychology. In the latter discipline, the identity and relations of the investigator and subjects and the location, circumstances and procedures of data collection are

explicitly detailed as part of any report. This has rarely been done in anthropology, but, when this component of the methodology of psychological investigation is imported into ethnography, it leads to a realistic modesty about one's interpretative conclusions (Greenfield 2000: 565-567).

There is a tendency to import one's own personal and cultural predispositions into study of a foreign or ancient culture. A case in point is the interpretation of Biblical texts from a modern Christian or Jewish perspective, so that exegesis becomes *eisegesis* (Wyatt 1996: 8, 22). On a *prima facie* basis I suspect that a form of eisegesis takes place even in the most respectable works of ethnography. For example, Evans-Pritchard (1956: ix) notes his and other investigators' observation of similarities between the conceptual worlds of the Nuer and the Old Testament. Of course I am in no position to say, and do not say, that similarities do not exist. I only wonder whether the observation of genuine similarities may induce an interested party to find more similarities than are actually there. And even Evans-Pritchard did not refrain from putting *system* before evidence (Kuper 1988: 196-201).

Naïve rationalism

I do not approach my subject from the point of view of ethnology. I approach it from a rationalist point of view. Stanner (1960: 58) says: 'It is plainly a mistake to allow inquiry to be ruled by the philosophical notion that religious or metaphysical objects do not exist. They *do* exist for many peoples under study....' My position is completely the reverse: *the alleged metaphysical objects do not exist at all.* The worth of Stanner's position is that it facilitates empathy with target cultures, as acknowledged above. The worth of my position is that one straightforwardly tries to find out what is going on without becoming sidetracked by pretending to subscribe to beliefs to which most of us cannot possibly subscribe. In regard to the 'religious or metaphysical objects', the phrase 'they *do* exist for many peoples', with the implication that they do not exist for us outside the target culture, is in my view a misuse of language. What Stanner means is that we do not, but the target peoples do, *believe* that these objects exist, not that those objects simultaneously exist and do not exist. This common type of language misuse is discussed further below in connection with 'truth'.

The philosophical foundation of my approach is the skeptical empiricism of Hume and Russell, combined with the realism of Popper (see below). Among many relevant passages from Hume, this one states the rationalist attitude to the supernatural most strikingly: 'When anyone tells me, that he saw a dead man restored to life, I immediately consider with myself, whether it be more probable, that this person should either *deceive or be deceived,* or that the fact, which he relates, should really have happened' (Hume 1777: 116).

Here I do not seek to set out all the principles of rationalism. On an analogy with naïve set theory in mathematics, an informal but formalizable treatment of the subject (Halmos 1960: v), my position could be characterized as *naïve rationalism*[1].

In much of physical science it is possible to formulate hypotheses and then conduct and repeat experiments to test them, because one is investigating how matter and energy behave in general. In history we deal with unique events; we investigate sources rather than test more or less timelessly applicable hypotheses. The *prehistory* of ideas of the supernatural may seem to fall into neither the category of experimental science nor even that of history, because its sources are so meagre. However, my position views cultural ideas and practices as being capable of explanation, just as geological formations are explicable. It is not possible to observe from beginning to end the unique formation of a mountain range, but we do not say that the process by which mountain ranges come into being must therefore be uninvestigable: we have a theory of plate tectonics. In the same way, although we cannot observe how religious elements came into being in prehistory, it should still be possible to formulate credible hypotheses regarding the processes whereby they may have originated. Moreover, with religions, unlike mountain ranges, it is possible to observe the process of cults coming into being in our lifetimes and in recent history (La Barre 1970a).

If one is looking for religious origins, then I think one has to be objective as far as possible, to stand outside given cultures, avoid eisegesis of our own religious faith or of elaborate structures or systems, and try to see from which non-religious or pre-religious phenomena religious practices and ideas may have developed.

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[1] This term may conceivably have been appropriated by some philosophical school, but I intend no connotation except that of the individual words. And of course I do not claim that a philosophical position is formalizable mathematically.

Truth, veridicality, reality

It is of the essence for the present study to distinguish between truth and falsehood and between veridical and non-veridical (false) perception.[1]

Truth

I state briefly an adherence to realism and the correspondence theory of truth as expounded by Popper (1979: 32-47). According to realism there is a world *out there* which we experience, live in and are part of. According to idealist (subjectivist) philosophies the world of experience is created by our minds or mediated in such a way that ultimate reality cannot be known (e.g., the Kantian position). Neither realism nor idealism are refutable or provable – they are metaphysical positions – but Popper has shown that the arguments in favour of realism outweigh those for idealism. Realism is in accordance with common sense and allows comprehensive, coherent interpretation of our experience. Truth is a property of propositions, namely that they correspond to the facts. The idea of truth is therefore absolutist, but no claim can be made for absolute certainty. We can seek truth – that is, seek for true propositions to describe the world – but can never be certain that we have attained it.

The adjective 'true' is primary, not the noun 'truth'. The adjective 'true' describes propositions which *correctly describe* or *correspond to* facts or states of affairs. Facts or states of affairs are aspects of the world at large. Propositions are linguistic and quasi-linguistic entities such as declarative utterances, writings or thoughts. A declarative utterance, writing or thought proposes *that something is the case.* The abstract noun 'truth' allows us to talk at a second-order level about the relation of correspondence between a proposition and the state of affairs which it purports to represent. Truth is merely this correspondence. It is not something else in its own right. Difficulties arise when we allow our tendency to hypostatize or reify abstractions to get out of hand, and when we uncritically believe that all common uses of words must genuinely be coherent. The tendency in modern languages, as compared with, say, classical Latin, to use nouns plus the verb 'to be' rather than free-standing verbs encourages misleading reification of abstractions. For example, rather than say 'I am a *seeker after truth'*, I would express myself more clearly if I

[1] I only state this position positively, and do not take up space in criticizing cultural relativist or postmodernist views incompatible with it.

avoided using the abstract noun 'truth'. I could say, 'I seek to understand how the world is and my place in it' or 'I seek to understand a body of true propositions about the world and my place in it, to which I can consent and adhere'.

Besides propositions (or statements), language includes other types of utterance, such as exclamations and expressions of wishes. Only propositions, however, have the property of being true or false. We can therefore answer Pilate's question (John 18: 38). Truth is predicable only of propositions, and a proposition is true if and only if it corresponds to a real state of affairs which it purports to describe. Use of the abstract noun 'truth' with reference to anything other than propositions is either metaphor, abbreviation or incorrect usage. When Jesus said 'I am the way, the truth and the life' (John 14: 6), he was speaking metaphorically. When a Christian says to an unbeliever, 'I wish you would be more open to the truth', he or she is uttering a verbal shorthand for 'I wish you would be more willing to consider that certain salient propositions in the Gospels may correspond to reality'. On most occasions when the phrase 'religious truth' is uttered, I should think it is a straightforward misnomer for 'a body of religious *belief*'.

The proposition 'the cat is on the mat' is true if and only if the cat in question actually is on the mat in question. If there is no cat or if it is not on the mat, then the proposition is false. Some philosophers would maintain that if there is no cat the proposition is not false but meaningless. This is to get round the problem that, according to the law of excluded middle, the proposition's negation, 'the cat is not sitting on the mat' becomes true if the original proposition is false, so that now there seems to be a true proposition about a non-existent cat. However, it appears to me that, in the absence of a cat, the original proposition is still meaningful but false.

Veridicality

In a similar way, I maintain that our perceptions are either veridical (true) or non-veridical (false). If I see a cat on the mat, then this perception is veridical if and only if there is a cat on the mat in question. If there is no cat or no mat, or there is a cat but not on the mat, then the perception is non-veridical, because it does not represent to me what is actually the case.

Veridicality is entirely a philosophical matter, just as truth is an absolute concept. It has nothing to do with psychology or neurology or with how human brains construct perceptions. We know that perceptions are not simple representations of sound waves entering the ear or of photons impinging on the retina. They are complex constructs which include material assumed or filled in to complete our image of what may be there, along with associations from past perceptions (Ramachandran 1999). Further, it does not matter whether I have any means of determining what is the case other than my perception. If my perceiving the cat is in doubt, I could ask someone else whether they too perceive the cat and whether it is sitting on the mat, and I could train a camera and a microphone on the place where I believe the cat to be. But then, if the cat is illusory, the other person I ask and the instruments I deploy could be illusory also, because I depend on perceiving the other people and instruments.

In practice, both in science and in everyday life, to determine what is the case we depend on the concurrence of our own senses among themselves, with the testimony (which we receive via our senses) of other people based on their senses, with readings of instruments apprehended by our senses, and on the coherence of new perceptions with past experience. This is the best we can do, although we can never be completely certain. But, because it is the best we can do, it is the rational way to proceed. Conversely, to rely on our own perceptions if they conflict with past experience, with those of others and with readings of instruments is a more dubious proceeding.

The philosophical complexity of the issue of truth and the psychological and neurological complexities of perception should not blind one to the fact that human beings manage very successfully on the basis of concurrence and coherence. Whatever philosophers may say, we know perfectly well in practice what we mean by 'truth'. In a criminal court, a principal objective is to determine what actually happened in the case. To that end, witnesses affirm that they will tell the truth. When doubts are expressed about evidence, they have to do with the possibility that witnesses may deliberately lie or that their recall may be mistaken. The doubts are not Cartesian, nor are neurologists generally called in to perform scans to check whether witnesses' brain processes are aberrant.

I leave some philosophical issues hanging, but am concerned here to clarify the concept of veridicality of perceptions. A perception or experience of something is veridical if and only if what we think is there is actually there. If I think I see a ghost, the perception is veridical if there is a ghost there, an external object of my perception. If the perception of a ghost is only a construct of my mind, say an hallucination, and there is not a ghost there in the outside world, then the perception is false. Even if what I perceive as a ghost is an hallucination caused by an external agent projecting an image telepathically – as some investigators have suggested (Chapter 3) – then it is still not a *ghost;* it is just a projected *hallucination.* My perception is still false, because what I think is there (a ghost) is not actually there. The fact that the apparent perception has a cause, internal or external to me, has no bearing on its veridicality or otherwise. Unless there is a corresponding external object of the perception, the perception is non-veridical.

Confusion of veridicality with value

Some may say that the circumstances or mechanism whereby a subjective experience, in particular a religious experience, is mediated has no bearing on its truth, but that the consequences of the experience make for its truth or falsity. For example, if I have a vision of a saint, it may be that she actually appeared to me and was present externally, or it may be that I hallucinated the appearance. In either case, if the experience changes my life and I become a better person, then they would say it was a true vision.

However, this is to confuse the *truth* of the vision with its *value* or *significance.* I agree that the value of the experience is determined by its consequences and not by how it comes about. But its truth – or, better (in respect of perceptions), *veridicality* – is determined by the circumstances whereby it comes about. If the saint is actually there, then the experience is a veridical perception. It may or may not have value or significance, depending on whether I change my conduct for the better as a result. If the saint is not there, then the experience is a non-veridical perception, but may still have value if it jolts me out of my unbelief, causes me to change my life and become a better person. But it does not become *true* or veridical by having value. It is veridical or not only according as its purported object is actually there or not.

The use of the word 'true' to mean 'having value or significance' is strictly a misuse of the word which causes confusion. It allows the speaker to claim the dignity of truth for something which is valuable or personally significant but strictly false or just dubious. Equally mistaken is the phrase, which one sometimes hears in respect of religious belief, 'it's true for me', as if something can be true for one person and false for another. A correct phrasing would be 'it has value or meaning for me'. In my view, the phrase 'true for me' should have no place in an honest person's vocabulary. Even famous politicians do not use it when tried for perjury.

In a similar vein, James (1903: 8-17) discusses eccentric and apparently pathological behaviour in the lives of some religious leaders and among religious people generally, but argues against what he calls 'medical materialism', the view that to explain the origins of behaviours and beliefs is to undermine their significance. Parrinder (1976: 167-168) notes that some scholars reject visions and similar paranormal experiences as having nothing to do with valid mystical experience. He himself acknowledges that visions and voices are abnormal on the grounds that most people do not have them and that they are sometimes produced when the subject is disturbed or diseased. Even so, he is prepared to accept such phenomena, however caused, as meaningful concomitants of valid religious or mystical experience. For my part, so long as we do not confuse truth with value, veridicality with significance, I do not take issue with those authorities.

Reality

Another often casually used word is 'reality'. The real is generally understood to be contrasted with the unreal, fake, false, deceptive, illusory or imaginary. In such a strong sense the adjective 'real' belongs with the philosophical position of realism discussed earlier. 'Reality' is taken to refer to a state of being real or to something which is real.

With reference to a shamanic world-view, a phrase such as 'other-worldly reality' (Ripinsky-Naxon 1993: 69) is therefore a gross misnomer for '*imaginary* other-world'. As I have stated earlier, for the most part, anthropologists do not seriously accept the ontology of target tribal cultures. Even shamans of different tribes in the same country often do not accept each other's world-view (Devereux 1980: 32), let alone shamans from different continents. Like the believer's defence 'it

is true for me' (see above), the defensive claim, with reference to a culture under study, 'it is real for them' is a misleading paraphrase of the more accurate 'they think it is real (but it is not real)'. Even in this phrasing, who are designated by 'they'? Not all the people even in a small-scale society share the same world-view. As Radin (1938) points out (Chapter 11), the world view of the religious specialist is generally much more complex than that of ordinary people.

I do not seek to impugn primal cultures or those who study them. I only wish all workers would keep a tighter grasp of their language.

Psychoanalysis

Freudian hypotheses have been put forward to account for various supernatural beliefs and practices, and it may seem strange that I make little use of them. They fall foul of the general criticism of psychoanalytic theory that no instance could ever be put forward which would count as showing the theory was false. On Popper's prescriptive definition, therefore, psychoanalytic theory does not count as science (Popper 1972: 34-38; 1979: 38; Schatzman and Fenwick 1994: 230). In my view, postulated entities and processes such as *ego, superego, id, complex, primary process, catharsis* are problematical unless or until they can be correlated with observable and measurable neural processes. Of course there is dynamic psychology other than the Freudian (Frude 1998; Malan 1995). In Appendices 3C and 11A, I discuss specific psychoanalytic hypotheses.

Paranormal versus supernatural

I have occasion, particularly in the next chapter, to refer to the *paranormal* and the *supernatural.* I use 'supernatural' to refer to those alleged phenomena which require the existence of non-physical beings such as spirits, ghosts, demons and gods; non-physical locations or states of being such as heaven and the astral plane; and non-physical processes such as magic. I use 'paranormal' to refer to alleged phenomena which are unexplained on the basis of natural laws as understood at present. These phenomena are thought by some of their protagonists to be in principle amenable to scientific investigation, so that in the future they may become explicable and predictable by a more comprehensive understanding of the forces at work in nature. They may be supposed to represent the action of impersonal natural

forces or mechanisms not yet understood – such as fields in spacetime which might mediate telepathy – or of natural personal agencies not yet clearly identified – such as extraterrestrial aliens.

Paranormal phenomena may be expected to include telepathy, clairvoyance, prescient dreams, UFO encounters and perhaps the movement of objects in poltergeist episodes. Supernatural phenomena, on the other hand, are in principle beyond scientific investigation: they involve personal agents which defy present or possible laws of physics. There is a major ontological dimension to the supernatural: it requires a realm of being additional to the natural. Supernatural belief entails this ontological burden.

My definition above would demand mutual exclusion, but in practice, the boundaries are fluid and there is overlap or inclusion of *supernatural* within *paranormal,* depending on one's point of view. Alleged paranormal phenomena such as clairaudience may be attributed by some practitioners to supernatural agency, for example, the imparting of information by spirits of the dead. Some might suggest that magic is attributable to the agency of demons, and is therefore supernatural. Others might allege that it is a form of impersonal action at a distance by a living human subject and potentially explicable in scientific terms, even if not explained by science so far, and therefore merely paranormal. If poltergeist phenomena are attributable to demons, then the phenomena are supernatural; if they are attributable to voluntary or involuntary psychokinetic action by a living human agent, then they are paranormal.

Harris (1997: 7), drawing attention to the similarity between *mana,* a putative magical indwelling power in objects and people, and such unseen forces as gravity and electricity, points out that *mana* is not strictly a 'religious' concept. In other words, *mana* (likewise *wakan, orenda,* etc) belongs to the category of the paranormal, not supernatural.

Strictly speaking, encounters with extraterrestrial aliens ought to be entirely comprehensible in scientific and natural terms, even if the technology at the disposal of the aliens exceeds our understanding. However, alien encounters tend to be treated as paranormal because they generally manifest certain strange features shared with religious visions and ghostly appearances, as will be illustrated in Chapter 3.

The role of individuals

An essential part of my thesis is that religious ideas are thought and religious practices carried out by individual human beings.

Former Prime Minister Margaret Thatcher once dismissively said that there was no such thing as society. In at least one sense she was right. Biologically, it is populations that evolve, but it is individuals that embody the effects of genetic mutations and natural selection. The reason why groups exist is that it is in the interest of individuals to cooperate and compromise rather than live alone (Quiatt and Reynolds 1993: 2-3). Furthermore and essentially, society does not think things and society does not carry out actions: individuals do.

In the development of human culture, individuals, not society, had to have ideas, had to innovate. An individual was the first to do something, to haft a blade onto a shaft to make a spear, to light a fire deliberately, to have an idea of spirit. For each development, a person did something for the first time.

On first encountering the idea of the tribal parricide posited as the origin of the incest taboo in *Totem and Taboo* (Freud 1913), one may think it, in comparison with mainstream anthropological literature with its technical terms and abstractions, to be crude, a just-so story, so existential and immediate as to be crazy. But, on reflection, it is not so crazy, in that for any religious or social practice or concept there had to be a first event, a first occasion of the practice, a first idea. And, whatever it was, whenever it happened, it was an individual who enacted it.

Devereux (1980: 70) complains that 'culturologists sometimes seem to study Culture as though Man did not exist'. In fact, all we actually know of are individuals, even if they do similar things together. Malinowski (1948: 40-41) dismisses the concept of a 'group mind'. Neurology and genetics do not provide any hint of a mechanism whereby memories or images can be biologically transmitted from an organism to its offspring. Similarly, dismissing the Jungian 'racial unconscious', Devereux (1980: 6) delineates an *ethnic unconscious,* which is the putative unconscious material that a subject happens to possess in common with other members of his or her cultural community. Whether or not one agrees with Devereux that there is an ethnic unconscious, nothing is postulated by him except what is in the mind of each individual and acquired during his or her lifetime.

Suppose one wished to consider sacrifice in ancient religions. One might be tempted to use an expression such as 'the practice of sacrifice arose ...'. Consideration of another religious element might encourage one to write 'by the Upper Palaeolithic a sense of the numinous had arisen among the inhabitants of Europe'. Expressions like these are too vague. They miss the reality of what could have happened. They are misleading, because practices and senses do not 'arise' of themselves. *People do things.* Any such expression, therefore, must be viewed at best as shorthand for a longer and more detailed account containing propositions such as 'an individual did *x*, then an individual did *y*, ...' or 'an individual could have done *x*, then an individual could have done *y*, ...'. Accounts of such detail, as read, may seem simplistic, because, in describing mere actions and thoughts, they may of necessity leave out the abstractions and technical terms which one is accustomed to find in technical literature. Yet such accounts would be the reverse of simplistic. Only such accounts will suffice in getting to grips with religious origins, in attempting to describe the moments when experiences occurred to human beings or their predecessors, and the immediacy of what they may have felt and done.

In the introductory chapter, I wrote about phases, dead ends and streams of religious development through the ages. But such terminology can only be taken as abbreviation: in fact, only real individual people can have been the instigators, the abandoners or the perpetuators of any form of religion.

The consequence of this principle is that any theory which I may offer of the origin of a religious behaviour or concept has to describe things which an individual human or prehuman could have done.

The survival value of religion

Natural selection works as follows. A young organism which does not survive to reproduce does not pass on its genes to the next generation. Some of its characteristics may therefore not be present in the next generation, unless there are other carriers of the genes for those characteristics and those carriers do survive to reproduce. Some organisms will lack or possess in smaller than usual measure some characteristic that enables organisms of their kind to live successfully: for example, size, strength, agility, cunning, intellect, the abilities to reach food or catch prey or to avoid, deter or defeat predators. Because of a deficiency in some advantageous

characteristic, those organisms may not survive long enough to reproduce, and therefore may not pass on the genes for that deficiency. Those which possess the required characteristics in good measure are more likely to survive and reproduce, and therefore pass on their advantageous characteristics to the next generation.

We say some characteristics have survival value or are selectively advantageous. Genes for those characteristics are passed on because their possessors live long enough to reproduce. Genes for their absence or for their presence in a minimal or defective form are not passed on because their possessors do not live long enough to reproduce. Other characteristics may be present which are selectively neutral: that is, their possession does not affect the survival of their possessor. Such characteristics may therefore be passed on from one generation to the next but, as there is nothing to promote their retention, may disappear after some generations (Brace and Montagu 1977: 59-64).

Organisms are in competition with their siblings: for example, among mammals, the runt of a litter may not survive infancy because the others out-compete it for food and for the attention of the mother. Organisms in a community compete against each other: bull walrus fight during the mating season. Groups of organisms of different species compete, as do lions, leopards and hyenas for kills and carcasses on the African savannah.

Competition need not involve actual violence between competing species. When lions, leopards and hyenas compete, they do not generally attack each other, but rather seek their opportunity to feed within the restrictions imposed by the threat from other animals. When lions are about, leopards and hyenas wait to take their turn to feed off a carcass, but wait reluctantly. They each have their place in the ecology of the area, but they are still competing, not cooperating.

In a sense, all populations of different species are in competition with each other for territory and the available food within that territory. In Britain, the grey squirrel introduced from North America has out-competed the native red squirrel in most areas of the country. This does not mean that the grey squirrels have killed off the red squirrels, but that the grey squirrels have been more successful at exploiting the environment for food and have reproduced at a greater rate, so that they now outnumber the red squirrels.

It may be that in the course of human evolution our ancestors competed in a similar way, probably but not necessarily involving violence, with other hominin populations: *Homo ergaster* with *Australopithecus robustus* in East Africa a million and a half years ago; *Homo sapiens* with *Homo erectus* in the Far East and with the Neanderthals in Europe within the last hundred thousand years (Stringer and McKie 1993). Within the species *Homo sapiens,* in historical times the Europeans can be said to have out-competed the native Americans and native Australians, in the sense that most of the population of their former territories, and the dominant culture there, is of European origin.

The characteristics which allowed the Europeans to colonize other parts of the world were not superior physical attributes but the possession of superior technology and a culture which favoured exploration. In large measure, the same may have been true of inter-species competition between hominid populations in prehistory, as the robust australopithecines were physically almost as large as *Homo* of their time and *Homo erectus* were physically at least as robust as *Homo sapiens.*

Clearly, the possession of technology is not passed on from one generation to the next genetically. It is, however, a characteristic passed on by one generation of a population to the successor generation. The same applies to other elements of human culture. Certain cultural characteristics give the edge: possession of superior technology, particularly weaponry, is one such characteristic. The population which has inferior technology is likely to be dominated, displaced or replaced by the population which has better technology. There operates here a kind of natural selection. It is selectively advantageous to have more advanced technology: that is, advanced technology has survival value. One would expect the same principle to have applied throughout prehistory.

Possession of a given religion can be viewed as a characteristic analogous to possession of technology. Historically, it has been passed on from one generation of a population to the next, along with other elements of culture. It may be that possession of one kind of religion is advantageous to a population: for example, a religion which claims universal applicability and encourages exploration and proselytizing, such as Christianity and Islam, versus local tribal religions. Here, I do not wish to discuss whether a given religion might have better survival value for the

population which espouses it, as against another population with a different religion. Nor do I wish to discuss whether a given religion might have survival value for itself as against another religion, treating the religions as *memes* (Dawkins 1976), so that one religion is more likely to survive in the world, to retain adherents, than another.

For my purpose the important question is whether the possession of *religion of any kind* might be selectively advantageous over the non-possession of any religion at all. I reiterate: apes do not have religion; we do. And we are vastly more successful as a species than apes. In prehistory, I think we can assume, human or prehuman populations with religion would not have survived if it had been selectively disadvantageous to have religion. The fact that all recent human populations have religion would indicate that possession of religion has not been selectively disadvantageous in prehistory. This rather sweeping statement needs analysis.

As proposed in Chapter 1, religion can be viewed as made up of identifiable components or elements. It is the elements that should be seen as the cultural characteristics relevant to survival. I believe we should expect that the religious elements present in the cultures of human or prehuman populations which survived were not selectively disadvantageous to those populations. This means that either they were selectively neutral or they conferred a competitive advantage. If they were only selectively neutral, we might perhaps expect them to have died out after some time, and not to have continued for millennia.

There is a further possibility, which is that the religious elements need not themselves be the subject of a selection process which has ensured that populations possessing them have survived. Some of them could be the selectively neutral consequences, perhaps by-products, of other characteristics which have been positively subject to selection. Such latter characteristics might not be cultural phenomena but psychological dispositions or physiological features of individual humans or prehumans. They would therefore be transmissible genetically. On this proposal, certain religious elements may be the by-product of genetically transmitted characteristics of our human or prehuman ancestors, subject to natural selection in the same way as acuteness of eyesight or body proportions. These genetically

transmitted characteristics in turn must have been at least selectively neutral or, more likely, selectively advantageous.

In later chapters I intend to argue in favour of the view that some religious elements are indeed selectively advantageous, and that some are the by-product of selectively advantageous, genetically transmitted characteristics.

CHAPTER 3

THE NUMINOUS: SUBJECTIVE SUPERNATURAL EXPERIENCE

Otto

The numen

An extensive examination of the nature of specifically religious feeling has been carried out by Rudolf Otto. He shows how, besides the rational dimension of theology and religious thought, there is an emotional dimension, which he says is the innermost core of any religion, whether primitive or sophisticated. This dimension is characterized by a numinous state of mind, which is qualitatively different from and not reducible to any other feeling. This numinous state of mind is an awareness of the uncanny, that which is in itself numinous, a *numen*, the holy.

In its developed form, this sense is manifested in the contexts of mysticism, profound worship, contemplation of nature and occasions when one is faced by the wholly other, when one feels one is in the presence of the holy. The numinous sense has various moments or components, including self-abasement, dependence, awe, fear, wonder, rapture, the awareness of creaturehood, of being a created thing. Otto (1925: *passim*) finds examples of the sense of the numinous throughout the Old and New Testaments, and in the writings of other sophisticated religions.

However, he also draws attention to the numinous sense in a less exalted form, the fear of ghosts. This is 'a degraded offshoot and travesty' and 'a caricature' of the genuine numinous or daemonic dread (1925: 28-29). It is treated by Otto as a genuine form of the numinous sense and not something altogether different.

The fear of ghosts would appear to be a survival into modern life of daemonic dread as it could first have been experienced by primitive peoples. According to Otto, daemonic dread is the starting point for all religious development. It takes the form of a sense of the uncanny, weird or eerie. Daemons and gods are the products of objectifying this dread. Natural occurrences and events in everyday life which leave one baffled are liable to become endued with the daemonic dread or numinous feeling, so that they become miracles or portents. Otto classifies this daemonic dread as a genuine form of the numinous sense because it is not just a more intense form of

fear in general but qualitatively different from any other kind of fear. It includes a shuddering which is absent from 'natural' fear, with a creeping of the flesh and the blood running cold. He points out that one can be terrified without experiencing daemonic dread. One could adduce examples of natural fear: stage fright, agoraphobia, fear of flying, fear when bungee jumping or parachuting, fear when a car crash seems about to happen. None of these is likely to contain the thrill, the horror or the element of shuddering, which we associate with fear of ghosts and dark places. Natural fear is not transformed into daemonic dread merely by being intensified. Even gods in higher religions retain an element of the ghost in them, the quality of the uncanny or awful. As well as being an object of fear, ghosts are an object of attraction. One is drawn to ghost stories, and people wish to visit allegedly haunted places, because the idea of supernatural beings exercises a strong curiosity, even fascination. The reason why ghosts so much capture the imagination is that they belong to another realm, they are 'wholly other'. Spirits and souls are conceptual objects produced by the rationalization of daemonic dread. The experience is prior to the concept (Otto 1925: 15-16, 27-29, 66).

In much of this, I think Otto is essentially correct, but criticism can be levelled on at least three grounds.

Firstly, it is not clear whether Otto claims that the experience of the numinous is in all cases a veridical apprehension of something external or objective. In certain places, he seems to make this claim, as when he says that the feeling 'has immediate and primary reference to an object outside the self', and the numinous is 'felt as objective and outside the self', an 'immediate datum of consciousness'. He asserts that we have an inborn capacity to perceive and understand the numinous in the world (1925: 10-11, 63). In the development of the religious consciousness, as indicated, for example, in some of the stories in Genesis, the daemon, conceived as the object of the numinous sense, is a god or pre-god, the numen at a lower stage. However, demons, in the sense of devils, are, like ghosts and spectres, 'spurious fabrications' of the imagination (1925: 75). So Otto seems to admit that the sense which apprehends the numinous can be activated in the absence of a real numen.

Altogether, it would appear that the genuine object of the numinous sense is claimed by Otto as an objective reality, and in the end it is God, as apprehended in

Christianity, Hinduism and other religions, but certainly the God of Christianity (1925: 74-96). A more developed awareness of the deity may be manifested in mystical and religious experiences, while initial inklings are given in the form of minor numinous experiences; and for prehistoric people those experiences may have been no more than 'an inchoate stirring of the feelings' (Otto 1925: 10-11, 26, 63, 75).

Secondly, the fear of ghosts, demons and other supernatural beings contains some of the moments of Otto's sense of the numinous: the uncanniness, the shuddering, the chill, the creeping flesh, and the attraction of curiosity. But the ideas of ghosts and spirits do not give rise to awe and reverence, or to the sense of creaturehood and self-abasement, the sense of being in the presence of the overpowering, the sublime, the beyond, all of which are emphasized by Otto from the beginning (1925: 8-11), and they certainly do not give rise to love. The latter sensations seem to me to be limited to worship and the mystical sense of apprehension of the deity, and are confined, I should think, to the historical developed religions. In particular, they are characteristic of Hinduism, Buddhism, Sikhism, Judaism, Christianity and Islam in certain developments.

There are religions which accept the existence of gods but where awe is an alien sentiment (*cf.* Kraemer 1956: 76). Awe and reverence are said to be absent from the tribal religions of West Africa and elsewhere (Horton 1960: 26). The Japanese and Balinese do not experience awe in connection with the objects of their worship (Guthrie 1993: 23). The Tungus regard supernatural beings as 'stupid, cowardly, vain and greedy' (Baldick 2000: 135). Parrinder (1976) studied African religions for twenty years, but, attempting to find mysticism in world religions, is singularly unconvincing on African religion and Asiatic shamanism; he leaves Australasia and Oceania out of account altogether. Ecstasy is not necessarily mystical. An ecstatic ritual at the conclusion of which the protagonist falls down unconscious may have more in common with the hysterical excitement of a rock concert enhanced by Ecstasy tablets than with mysticism. It would seem to have little to do with either monistic or theistic categories of mysticism as Parrinder (1976: 11-12) describes them in Hinduism and under which he is able to subsume forms of

mysticism from elsewhere in the world, or with the definition and characteristic cross-cultural themes of mysticism which he lists.

Thirdly, if the object of the numinous sense is real, and is God, then it is clear why it should be experienced in contexts of presumed encounter with God such as Abraham's intercession for Sodom (Otto 1925: 9-10; Genesis 18: 22-33) or the theophany of the burning bush (Otto 1925: 77; Exodus 3: 2-6)[1]. It is not clear why it should be experienced in connection with natural phenomena such as thunderstorms, dark caves, strange animals and the like. Otto attempts to deal with this question (1925: 27, 66), but, while fear of the supernatural may be present in the latter contexts, I do not accept that awe is present.

Two kinds of numinous experience

It seems to me that two kinds of experience are conflated. Otto distinguishes the two varieties but does not draw the conclusion that they are separate. One is the mystical sense of what Otto calls the *wholly other,* which induces awe, reverence and abasement (1925: 25-29), and sometimes fear, but a fear tempered with adoration and often with love and yearning for union with its object. This is the *mysterium tremendum et fascinans.* In some degree or other it becomes accessible to people during acts of worship and prayer, and to experience this mystery more fully is the objective of theistic mystics (Parrinder 1976). The other experience is the rather differently mysterious and fearful sense of a presence of what I shall venture to call the *merely other,* the unknown and usually invisible. The fear of ghosts is represented among the varieties of this kind of numinous experience. While it may be mysterious and frightening, its object is not the same as the awful, awe-inspiring *mysterium tremendum et fascinans.*

I suggest that ghosts, spirits, demons, local gods and the like are not *wholly other* (*pace* Otto 1925: 29), but *merely other;* they are other and uncanny. The second experience is not, I think, a debased variety of the former, but is a separate phenomenon. It never contains reverence or love. One does not feel abased in the presence of its presumed object. One does not normally wish to approach its object,

[1] These are highly literary examples, and not related first-hand by the experients, who are legendary figures. The burning bush may be a symbol of the menorah, the lights of which which burned continuously without consuming it.

but rather to get rid of it. It is, much more often than not, characterized by fear, and fear of a particular type, which Otto describes well. It is not just fear, but supernatural fear.

Supernatural fear

Numinous fear is, I think, exclusively associated with what we call the supernatural, the unknown which yet knows us, the sentient but unpredictable, the unexplained and usually invisible. It arises from the allowed, anticipated, sensed or even witnessed presence of something unknown. We allow the possibility that something may be there; more than that, we may suspect it; sometimes we seem to *sense* that something is there; some of us even witness an apparition. All these, and I think only these, are the circumstances in which the fear occurs.

Supernatural fear is well exemplified by the following stanza from *The Rime of the Ancient Mariner.*

> Like one that on a lonesome road
> Doth walk in fear and dread,
> And having once turn'd round, walks on,
> And turns no more his head;
> Because he knows a frightful fiend
> Doth close behind him tread.

It is clear from the numerous references to spirits in this poem that Coleridge intends a supernatural fiend and not a human assailant.

Some people may experience the supernatural fear when lying in bed in the dark at night or when sitting alone by a campfire in a forest clearing. It is most strikingly felt by a powerless subject during nightmares and waking experiences in which the presence of a threatening sentient entity is sensed or even witnessed, for example in the waking state when in an allegedly haunted house. Such a house is a location where, in principle, one might be prepared to believe there could be an object of the fear, an object of the sense of presence, an external agent.

When an unexpected sound or shadow leads one to believe that something might be there, but it turns out that the sound was caused by a breeze outside or the strange shadow by a flicker of the light, or both were caused by a neighbour's cat, then there is relief. The fear is relieved by identification of a natural source for

unexpected phenomena. When the source remains unresolved and the possibility of an *unnatural* source remains open, the fear continues and tends to intensify.

Moreover, it is no impersonal force that gives rise to the numinous fear. The fear is always of something sentient and personal. We fear that in our vicinity there may be an unknown *person,* with attitudes and designs, with the unpredictability and deviousness, and often the malice, which we know from human beings. But the unknown entity seems not to share the limitations and dependencies of a human being: it may not have to be in a particular place, it may not have to breathe or eat, it may be able to reach us through walls and locked doors, it may be invisible or appear and disappear at will.

So the putative object of supernatural fear is an unknown personal being, whose mentality is humanlike but whose behaviour is unnatural, not limited by the physical laws to which human beings and other animals are subject. Even if we have not personally witnessed a supernatural apparition, the context in which many of us have witnessed the sort of behaviour which we associate with apparitions and presences is, I think significantly, that of dreams.

Fear of the supernatural does not need to have a genuine object. The fear is provoked not necessarily by a supernatural object as such but by situations in which we suspect a supernatural object because there is no obvious natural object. If the fear did have to be provoked by a genuine object, then, since the fear certainly exists, the supernatural would have to exist. That the fear comes about without a genuine object can be illustrated from everyday life.

Frequently one discovers that an event, which one might at first assign to a supernatural cause, and which provokes the supernatural fear, turns out to have been caused by natural phenomena. Such would be the opening of a door by itself at night or the thump of a locked door against the jamb as if something is trying to enter, which are explained by a gust of wind. The supernatural fear has occurred, but it has no genuine, that is, supernatural, object.

The supernatural fear comes over people when they merely read books or watch movies or television programmes about ghosts. There may be a creeping sense of something there, even that there is something behind one or over one's shoulder. There is no comparable fear when one watches other frightening material, such as a

sequence in a film about an explorer falling off a precipice or encountering a wild animal. Especially in an IMAX cinema, watching a sequence from the point of view of someone on a rollercoaster or in the cockpit of a light aircraft may induce a sensation of dizziness and fear. Similarly, people may be revolted by the gore and deformity in some horror films, although they know that what they are seeing is just makeup and special effects. But there is nothing to compare with the creeping panic associated with the subject of ghosts and other supernatural phenomena.

In such cases the fear arises, presumably, in the absence of an external agent, unless one is prepared to believe that supernatural entities are all around us, waiting to be called up to be objects of our numinous intuition whenever we are induced to think about their possibility, even in a context of entertainment. The experience therefore, however valid as an experience, need not be veridical.

Even when we fear it, the supernatural has throughout history held a certain fascination. We want to know what it is that so frightens us and what the strange apparitions, sounds and paranormal phenomena represent. In this respect, the merely other shares another feature of the tremendous and fascinating mystery which Otto ascribes to the wholly other.

Numinous experiences

Throughout his master work Otto in effect makes a case for a continuum of the numinous sense from the 'debased' form to the higher, mystical forms. Whether or not there is a continuum, I regard the extreme lower and higher forms of the numinous experience as so different in practice – that is, when experienced by a subject – that I shall treat them separately.

The higher mystical experience of awe I am going to leave aside, for the most part. It *may* have occurred in prehistory. But, without archaeological traces in the form of inscriptions or art of a sort which would give serious reason to believe in its occurrence, there is no reason to believe that it did occur. I am not aware of any prehistoric evidence of this sort of mystical experience. There is evidence that prehistoric people may have had *visions* and that they may have believed in *another world,* and I shall try to treat of those in Chapter 10. However, evidence of mystical experience such as that of St Bernard or of the self-abasement recorded in the book

of Job (Otto 1925: 34-35, 80-83) is probably undetectable by archaeology. Those are reflective, contemplative experiences. In the forms in which we know them, they occur only in the context of a cultural tradition. In the absence of such tradition, it is conceivable that sensations of numinous awe could occur to an individual creature, but it is unclear what trace might be left which would show that they had occurred.

I concur with Otto that the earliest numinous experiences most likely were, as mentioned above, no more than 'an inchoate stirring of the feelings' (Otto: 1925: 26). The primal, inchoate feelings were, I suggest, of the 'debased', fearful sort, because, as we shall see, those feelings are certainly accessible to everyone. In the next section I propose to list some examples of apparent encounters with the uncanny, the *supernatural,* so as to make clearer the range of experiences people can have, and then discuss the prevalence and significance of such experiences. That human beings do experience a numinous fear in a variety of situations, we can then take to be given. It will remain in Chapters 4 and 5 to try to account for that uncanny, ghostly quality which applies to such experiences, given that, as discussed above, there need not be an external object. Such experiences, I shall further presume, were not limited to modern humans, but may have been endured by our remote, even prehuman, ancestors. In Chapters 7 and 8 I shall then ask what early humans and prehumans could have made of their encounters with the *merely other.*

Sense of presence

Accounts of presence experiences

I reproduce below two cases and in Appendix 3A a large number of episodes in which the experients felt that they were undergoing a paranormal or supernatural encounter and in which Otto's numinous element is clearly evident. In many cases there is an expression of fear, which will clarify the peculiar sensation of supernatural fear. They are all cases of a phenomenon widely known as the *sense of presence* or *sensed presence* or *the entity.* I shall only quote salient phrases from each episode.

Even in recounting the experience to another, the subject has to some degree interpreted it. The subject has to recall what happened, perhaps distinguish several events and put them in sequence; and then, to narrate the account, is obliged to use

terminology from the general or religious discourse known to him or her. The raw experience may have been more inchoate and less continuous and sequenced than the account would lead us to believe. There is no avoidance of this problem, but the best accounts we can have are those in the first person.

Case 1

A fellow student of mine, when I was in my twenties, joined an evangelical Christian group and became subject to fear of the supernatural at night. On several occasions, he awoke to find a weight on his chest, which he attributed to a demon sitting on him. One time he said a prayer which he had been taught, to dismiss the demon. However, the demon did not depart, and he believed this was because he had said some of the prayer wrongly. (So the prayer amounted to a magical formula.) When he told me this, I was sitting on a chair in his room, and he said that one night he had looked across and saw a demon sitting where I then was. The demon was small and round-bodied, grinning, and the top of its head was scorched.

Case 2

A man whom William James (1902: 58-60) describes as 'one of the keenest intellects I know' had in 1884 his first startling experience of the sense of presence.

... on the previous night I had had, after getting into bed ..., a vivid tactile hallucination of being grasped by the arm, which made me get up and search the room ...; but the sense of presence properly so called came on the next night. After I had got into bed and blown out the candle, I lay awake awhile thinking about the previous night's experience, when suddenly I felt something come into the room and stay close to my bed. It remained only a minute or two. I did not recognize it by any ordinary sense, and yet there was a horribly unpleasant 'sensation' connected with it. It stirred something more at the roots of my being than any ordinary perception. The feeling had something of the quality of a very large tearing vital pain spreading chiefly over the chest, but within the organism – and yet the feeling was not pain so much as abhorrence. At all events, something was present with me, and I knew its presence far more surely than I have ever known the presence of any fleshly living creature. I was conscious of its departure as of its coming: an almost instantaneously swift going through the door, and the 'horrible sensation' disappeared.

On the third night when I retired, ... I became aware of the presence (though not of the coming) of the thing that was there the night before, and of the 'horrible sensation'.

The subject then commanded 'this thing' to explain itself or to go.

It went as on the previous night, and my body quickly recovered ....

The experient then makes the following extraordinary remark. Bear in mind that he was oppressed by 'ghostly' fear and abhorrence.

I felt it to be like unto myself, so to speak, and finite, small, and distressful ....

This almost compassionate response of the subject to his psychic assailant is unique in the literature I have read. It confirms that the experience was entirely lacking the element of awe concerning which Otto is so positive. Here we are dealing with the second, 'debased' type of numinous sensation. James's informant identifies the finite creaturehood, rather than divinity, of the presence, a creaturehood shared with himself.

I suspect that most experients whose encounters I describe would have been able to agree with James's informant about the creaturehood of the presence, had their fear not been so great and had they been of so generous a spirit as this man. The experient in one frightening encounter (Appendix 3A, Case 7) actually wished to struggle with the entity. One is reminded of Jacob wrestling all night with the 'man' at the Jabbok (N. Wyatt, *pers. comm.*; Genesis 32: 22-30).

Further cases

Another twenty-seven cases are recounted in Appendix 3A.

Variety of presence encounters

Many more accounts could be given of paranormal visions, auditions or other episodes in which the experient sensed the presence of some kind of intelligent being. A huge number of cases are given even in the few references which I have consulted. Evans (1984: 11) refers to the 'colossal' quantity of material, and in confirmation tells us that between 1928 and 1975 no fewer than two hundred and thirty visions of the Blessed Virgin were notified to the Roman Catholic Church.

Not only are the numbers great but also there is a huge variety of paranormal encounters with an apparently sentient entity. The entity may be terrifying or friendly, visible or invisible, a saint or an extraterrestrial, often one of the 'grays' with silvery grey bodies and large slanting eyes. It may even appear as *men-in-black*, who seem to manifest in twos, wearing dark suits, and purport to be government agents attempting to intimidate the subject into not reporting to the authorities some earlier paranormal incident. Supernatural, extraterrestrial and other strange figures

have variously appeared at outdoor locations, haunted buildings or in people's homes, to experients who may be already awake or who believe they are roused from sleep. It is possible to classify experiences into types which share diagnostic characteristics, as Evans (1984) and Hufford (1982) have done. Even so, there appears to be, more or less, a continuum of experiences from the terrifying Old Hag and hauntings to the almost comic visitations by men-in-black.

Objective reality improbable

Some presences do not appear but are just sensed. Some apparitions are just faces or heads, or heads and legless bodies, or are whole bodies with heads and limbs. Some are unimpeded by physical obstacles; they pass as if insubstantial through doors and walls. Others take care to enter by a door, walk round furniture and people, and are reflected in mirrors. One subject said that when the apparition she saw passed in front of lights the lights were obscured, but the psychiatrist who was treating her was able to determine that at those times her eyes were still detecting the light (Evans 1984: 24, 189-191). In their study of apparitions, Green and McCreery (1975: 4) discuss what they call *metachoric* hallucinations, cases in which the subject appears to hallucinate the entire surroundings – for example, the bedroom or living room – as well as the apparition itself. Blackmore (1982: 167-169) puts forward a hypothesis that, during out-of-the-body experiences in which the subject apparently sees the real surroundings from a new vantage, the subject is not seeing at all but is mentally creating, in effect hallucinating, surroundings to correspond to that vantage.

The diversity of identifiable types of apparition is also a stumbling-block for credibility. If only one type of encounter, say the ghostly type, were asserted to have a real external object, then we might be able to assign it some provisional credibility pending investigation. But if all types are supposed to have real external objects, then the conclusion must be that a variety of types of intermittently encountered and unpredictable non-human intelligent beings – including demons of divers aspects, ghosts, angels and saints, along with extraterrestrials of several different species – take a keen interest in the affairs of humanity as a whole and of individual ordinary humans (*cf.* Evans 1984: 23). Evans intriguingly inquires what these beings occupy themselves with when they are not appearing to hapless humans. The improbability

of the conclusion casts doubt on the proposition that any kind of paranormal encounter has a real object.

What perhaps most of all inclines one to disbelieve the objective reality and to assume the imaginary or hallucinatory nature of presence and apparition experiences is the dream-like irrationality of many of the encounters. There is nearly always something odd and inconclusive about the behaviour of the visitor. If the presence is real and has a message to impart or has some ill intent to carry out, why does it not just get on with it, rather than, as it so often does, just stand looming beside the subject?

Evans (1984: 155, 291-292) points out that the conduct of alien (UFO) entities is 'almost always bafflingly meaningless'. For instance, aliens often seek to warn humankind about the dangers of proceeding down a path of planetary destruction. However, instead of communicating with world leaders, they invariably appear in a desert and deliver a trite message to a nobody. Sagan (1987: 379-380) reports a case in which a medium's spirit guide was alleged to have lived 35,000 years ago. Instead of imparting what would have been fascinating information about his lifetime in the Old Stone Age – let alone the mysteries of the afterlife – what he vouchsafed were 'banal homilies' indistinguishable from those delivered to UFO abductees.

Entities often appear in forms suited to subjects' conditioning, or advocate policies which agree with the subjects' personal predilections. Good aliens have long blond hair; bad ones have scales and slanting eyes. Sometimes aliens bring a pro-vegetarian message or are anti-semitic; the Blessed Virgin wishes the restoration of Latin in church services (Evans 1984: 292-293, 305-308; *cf.* Budden 1994: 35). The fact that entities appearing to different people express *conflicting* views of the extraterrestrial world or of the hereafter makes accepting the veridicality of any of these experiences problematical. A similar consideration applies to near-death experiences, in which subjects recount different types of visions and draw different and incompatible philosophical conclusions about the nature of the world and man's place in it (see accounts in Bailey and Yates 1996).

Evans (1984: 178-180) relates how students were asked to write an imaginary account of an alien abduction experience. The resulting productions included a

wealth of detail and were indistinguishable from accounts given by claimed abductees. Many included a medical examination of the subject's body, most often the sexual organs. Evans suggests that the details of both sets of accounts came from the same source, presumably what the layman would call imagination.

Restricting the field

For my purpose, I am not pursuing all kinds of paranormal experiences, but only those of a fairly simple form without cultural associations.

I set aside those episodes experienced by several people and even by large numbers, such as some of the visions at Lourdes, or events where the subjects having the experience are witnessed by crowds of onlookers, as at Medjugorje. Forty per cent of visions of the Blessed Virgin are shared (Evans 1984: 109). Visions of saints, UFO visitations and encounters with men in black are loaded with interpretation even while the subject undergoes the experience.[1] UFO and alien encounters were unknown before the twentieth century, when awareness of the existence of other planets became accessible to more people because of education, science fiction and then the advent of rocketry and space travel. These experiences are culturally loaded with very specific associations. It is conceivable that the experiential content of some episodes interpreted by modern subjects as encounters with extraterrestrials would in an earlier century have been interpreted as encounters with demons, fairies or angels. Experiences such as these have too many present-day cultural associations to be dealt with in the context of my study of prehistoric origins.

There are numerous varieties of hauntings and spiritualist manifestations, as well as alleged extrasensory perception, prescient dreams, unidentified lights in the sky or on the ground, and all the rest. To collate the instances, let alone seek to explain the varieties of phenomena, would be a lifetime's work. For example, apparitions can be of the dead or of the living, rendering the simple hypothesis of ghosts or revenants inadequate to account for all the encounters. In fact, in the 1894 'Census of Hallucinations' published by the Society for Psychical Research, nearly

[1] In fairness, Bernadette Soubirou, even after her sixth vision at Lourdes, continued to refer to the object as 'it' and told a priest, 'I do not know that it is she [the Blessed Virgin] ... she has not told me that' (Evans 1984: 108). So she was not explicitly interpreting what she saw, even if those around her were doing so.

twice as many apparitions of the living were reported as of the dead (Green and McCreery 1975: 9).

There is such a mass and diversity of reported paranormal phenomena that it would be rather optimistic to expect that a single manageable theory should account for all of them. Fortunately, that is not the task I have set myself. With a view to Chapter 5, I concentrate on the *sensed presence.*

The plain experience of sensed presence, in the form most relevant to the present inquiry, is low-key, personal, and with minimal associations, as in most of the selected cases recounted here and in Appendix 3A. Except in a few cases, such as those in which old friends or even the self appear, the subject can make no supposition as to the identity of the presence. The episode usually lacks firm interpretation by the experient, who is confused and usually fearful. It is this kind of experience, without transmissible cultural content or interpretation, that might have occurred to prehistoric people and even to prehumans. This is the kind of experience which, occurring in prehistory, might have introduced to the world Otto's 'debased' form of the numinous.

The Old Hag

Hufford distinguishes a specific variety of experience, which he calls the *Old Hag.* This is the term used colloquially in Newfoundland, where he carried out initial surveys, and where there has been a folk understanding of it as a supernatural encounter (Hufford 1982: 1-11). The Old Hag is so called because sometimes the entity appears literally as a hideous old woman, although, as we have seen, the visual presence may take on many guises. Hufford (1982: 25-27) lists the features which distinguish the Old Hag.

Primary features

1. Subjective impression of wakefulness
2. Immobility
3. Realistic perception of actual environment
4. Fear

Secondary features:

1. Supine position (very common)
2. Feeling of presence (very common)
3. Feeling of pressure, usually on chest (common)
4. Numinous quality (common)
5. Fear of death (somewhat common)

Strictly, the Old Hag, on the above definition of primary features, does not require a presence at all, although the fact that the experience is so called seems to indicate that the presence of an entity is assumed. However, I think Hufford's point is that cases of, say, seeing an apparition or feeling pressure on the chest, without the complex of the four primary features (wakefulness, immobility, fear and realistic perception of surroundings), might be regarded as dreaming, a heart attack, haunting or heartburn, but would not count as the Old Hag.

When the presence occurs, it may be apprehended without being seen, heard or touched; it may be 'overwhelming', it is felt to be at a particular place in the room or in the house, it often moves toward the experient, it may have gender, it has a 'numinous quality' and 'almost always' threatening intent, and it may be felt to be evil (Hufford 1982: 22-23). Hufford does not explicate what he means by 'numinous quality' but I think we may infer that it refers to daemonic dread or the uncanny threat that is sensed in the presence.

Other secondary features reported in some cases are a tingling or rippling, 'electrical' sensation through the body (Hufford 109-113, 195-197, 242), hearing one's name called (Hufford 1982: 106, 108, 181-182, 193), and a sound of footsteps, shuffling or padding as the entity approaches (Hufford 1982: 32-33, 39, 87, 89, 94, 99). I suggest that the rustling of clothing, as in one of MacKenzie's hauntings (Appendix 3A, Case 14), and the shuffling in one of Budden's cases (Case 10) may also correspond to the footsteps.

On reporting the experience, the subject generally believes that he or she was awake during it. The room in which the subject is lying is seen as it actually is. There is no dream landscape or swift, fluid transition from one location to another or from one group of companions to another. There is a general sense of reality about the circumstances which, for each subject, distinguishes the experience from dreaming.

The physiological component of the core experience seems to be wakeful paralysis: the subject wakens from sleep but is unable to move. The condition is also known as *sleep paralysis.* During REM sleep the brain's quiescent system immobilizes the body; signals from the motor cortex are blocked from reaching the spinal cord.

The helplessness of that condition might give rise to secondary imagined or inferred features that involve a threat. Hufford points out that, in theory, the threat could then take a variety of forms, such as a fire, the sound of a riot outside, the ceiling collapsing. But in fact the threat arising in wakeful paralysis *always* takes the form of a presence, a sentient being or 'entity', human or non-human, within the house (Hufford 1982: 28). Jones (1931: 243) says, 'From the earliest times the oppressing agency experienced during sleep was personified'. This fact, for Hufford, argues against the entity being merely a secondary development or inference from the basic physiological features of the oppression experience. However, as will be shown in Chapter 7, human beings have a tendency to assume personal agency behind any unknown occurrence or predicament. This is not conscious inference but an innate, involuntary, unconscious process. It is possible, then, that the entity should be a subconsciously 'inferred' personification.

However, on some, and perhaps all, occasions, rather than personifying an at first impersonal threat, the sense of presence is prior to, and is what gives rise to, the feeling of being threatened. Sometimes the episode begins with a sense of presence not immediately accompanied by fear, and only as the experience takes its course, as the subject becomes aware of the predicament of being approached by something unknown, does fear develop (Appendix 3A, Cases 15 and 18). In other cases the fear is concomitant; I do not recall any instances in the literature in which fear precedes the sense that something is there. Benign visitations (Appendix 3A, Cases 21-27) are not personifications of threat, yet the sense-of-presence component seems to be the same sort of sensation as in the frightening cases.

In Newfoundland Hufford found that 23 per cent of those surveyed had had the experience of waking up and being unable to move. In groups surveyed in several areas of the United States, the positive response was 10-25 per cent. He estimates that a recognizable Old Hag has been experienced by about 15 per cent of the

population (Hufford 1982: 20, 50, 245, 247). These data show that the experience is not at all uncommon.

Further, the Old Hag has recognizable characteristics regardless of cultural tradition in the locality. In Newfoundland it was well known among the older generation, but on the mainland it was not. People who had not heard of it from others but had experienced it themselves described the same characteristic phenomena. There is a persistent pattern (Hufford 1982: 64-65, 245-248). These facts militate against the hypothesis that traditions of the supernatural in one's local culture induce the experience, rather as reading or watching a ghost story might induce unpleasant dreams. Certainly, some people may be more susceptible than others, and in the next two chapters I shall try to uncover possible factors which may underlie susceptibility. However, I think the significant conclusion toward which Hufford's evidence should incline us is that the phenomena of the Old Hag are not culturally determined but constitute an experience intrinsic to human nature.

Nightmares

Nowadays the word 'nightmare' is used to mean 'unpleasant dream', but originally, as one would expect from the etymology, denoted Old Hag or incubus experiences, in which the experient felt himself or herself trapped and oppressed or ridden upon by some horrific entity.

Jones (1931: 20, 52, 74-75) gives three cardinal features to distinguish what he calls *nightmare.*

1. agonizing dread
2. sense of oppression or weight on the chest
3. conviction of helpless paralysis

All three features occur as primary (fear, immobility) or secondary (pressure) in Hufford's definition of the Old Hag.

Hufford's remaining primary features (sense of wakefulness and realism) are added by Waller (1816, quoted in Jones 1931: 74): 'The degree of consciousness during a paroxysm of nightmare is so much greater than ever happens in a dream, that a person who has had a vision of this kind cannot easily bring himself to acknowledge the deceit ... .'

A chronic sufferer of nightmares, Macnish (1834, quoted in Jones 1931: 17-21), says: 'The whole mind, during the paroxysm, is wrought up to a pitch of unutterable despair ... utter and incomprehensible dread. ... At one moment he may have the consciousness of a malignant demon being at his side: then to shun the sight of so appalling an object he will close his eyes, but still the fearful being makes its presence known ... then he knows that he is face to face with a fiend. Then, if he looks up, he beholds horrid eyes glaring upon him ... . Or, he may have the idea of a monstrous hag squatted upon his breast – whose intolerable weight crushes the breath out of his body, and whose fixed, deadly, incessant stare petrifies him with horror.' And: 'No firmness of mind can at all times withstand the influence of these deadly terrors. ... all the ... horrid superstitions of sleep arise to indicate their power in the mind, which, under the fancied protection of reason and science, conceived itself shielded from all such attacks, but which, in the hour of trial, often sinks beneath the influence ... .'

According to Jones (1931: 25), *Angst* attacks indistinguishable from nightmares 'may run their whole course during the waking state'. He quotes Macnish (1834) again: 'The more awake we are, the greater is the violence of the paroxysm. I have experienced the affection stealing upon me while in perfect possession of my faculties, and have undergone ... being haunted by spectres, hags and every sort of phantom – having, at the same time, a full consciousness that I was labouring under incubus, and that all the terrifying objects around me were the creations of my own brain.' This quotation is particularly interesting in that it illustrates not only hallucinations during a waking state, but also that the fear accompanying the appearances was independent of the subject's evaluation that they were non-veridical.

Jones (1931: 44, 79) tells us that the nightmare is only one variety of anxiety dream but shares important features with other types, such as 'dreams of grimacing beings, dreams of being examined, pursued, etc'. In the nightmare, he states, dread reaches the maximum intensity known in waking or sleeping. I take this dread to be what I have called the supernatural fear: firstly, because from mercifully limited personal experience I would identify the two, and I suspect others would do the same; secondly, because the kinds of entities whose presence is sensed defy our

expectations of appearance or behaviour derived from natural creatures; and thirdly, because the panic in the face of the unknown and unpredictable as described above is consonant with the numinous dread delineated by Otto.

Diversity of explanations

Clearly some experiences, as in the more baffling cases, are not perceptions of actual objects. One wonders whether certain cases, such as one recounted in a television documentary[1], represent actual physical incidents perpetrated on the subject by an all-too-real living human. In this case, which resulted in long-term trauma, an adult man recalled that, when he was a teenager, he was sodomized by a male entity which entered his bedroom at night. Jones (1931: 84) relates a mediaeval case in which a young lady cried out when attacked by an incubus; her friends on entering found the offending supernatural being under her bed, where it had cunningly assumed the disguise of a bishop. One suspects, however, that most cases are not of real objects, supernatural or otherwise.

Sleep

This subsection deals with the physiological conditions which may underlie some presence encounters.

Sleep research identifies two major forms: REM (rapid eye movement) and non-REM, although the latter can be further subdivided. Non-REM stage 1 takes place as the subject loses consciousness, lasting only a few minutes. During it, relaxed waking alpha rhythm (8-13 Hz) gives way to slower theta waves (4-7 Hz). Stage 1 is followed by stage 2, which is repeated throughout the night and constitutes about fifty per cent of the whole sleep cycle. Stage 2 EEG shows the *sleep spindle*, made up of waves at 8-14 Hz. Stages 3 and 4 are deep sleep, in which EEG is characterized by some theta and mostly very slow, high-amplitude delta rhythm (3 Hz and below) (Hufford 1982: 119-120; Bear *et al.* 2001: 616).

During REM sleep, the electroencephalograph (EEG) is similar to that of a waking subject, showing fast, shallow beta waves (above 14 Hz). The subject often dreams, and motor centres in the frontal lobe issue signals for body movements. However, brain-stem nuclei which control the musculature do not relay the signals.

[1] *The Entity*, Channel 4 Television, 2001.

Apart from eye and ear muscles, the body is paralysed, even respiration being minimal. The paralysis appears to be a safety mechanism to prevent us from injuring ourselves while asleep. Wakeful paralysis, also contrarily known as *sleep paralysis,* occurs when the subject wakes while the body is in this paralysed condition (Bear *et al.* 2001: 614-616).

During non-REM sleep, the body is not paralysed, but the cortex, including motor cortex, is quiescent. If somnambulism takes place, it usually occurs during deep non-REM sleep. Up to forty per cent of children have an episode, but it occurs less commonly among adults. Eyes can be open and the subject avoids obstacles on his or her travels. Night terrors, or sleep terrors, in which the subject awakes with panic and screaming, occur mostly among young children and are also the product of stage 4 deep non-REM sleep (Bear *et al.* 2001: 609, 614-617; Hufford 1982: 122, 137).

Hufford (1982: 163-164) distinguishes Old Hag encounters from *night terrors.* The latter occur during stage 4 non-REM sleep, as does somnambulism. During somnambulism, although the experient is deeply asleep, the brain's sensory and motor cortices and the brainstem nuclei which mediate sensory and motor signals are evidently highly active. In night terrors it may be that the brain's centres which mediate fear responses are spontaneously activated without any accompanying subjective experience, so that the subject wakes screaming for no reason. Alternatively, perhaps sometimes a short-lived continuous brain process, this time subjective but 'unconscious', may also be under way, producing a frightening experience which is usually forgotten on waking. If this is so, however, one would expect evidence of activity on the EEG.

Clearly, wakeful paralysis is likely to be a major component of the incubus experience and of some Old Hag experiences. Wakeful paralysis is associated with REM sleep and therefore with dreaming. Hypnagogic hallucinations, in which there is an awareness of one's real surroundings, are dreamlike episodes at the onset of sleep and often associated with sleep paralysis (Bear *et al.* 2001: 625). Hufford concludes that Old Hag and incubus experiences occur when REM activity, normally limited to a period following stage 2 sleep, occur anomalously during stage 1. This is the combination of sleep paralysis and a hypnagogic hallucination. The body is

paralysed and a dream of sorts takes place while the subject is not fully asleep and is still aware of his or her actual surroundings. Such an explanation is consistent with the large proportion of Old Hag episodes experienced while napping or fatigued (Hufford 1982: 149-168, 246).

The subjective content of Old Hag experiences is much less diverse than that of normal dreams. This cross-cultural similarity has to be accounted for (Hufford 1982: 162, 245-248). Salient features are the heightened, non-dreamlike sense of reality and the feeling of a sentient presence.

Psychical hypotheses

These are interesting but, as they violate the principle of parsimony, I have relegated them to Appendix 3B.

A psychoanalytic hypothesis

This interesting but unfalsifiable hypothesis of Jones is discussed in Appendix 3C.

Hypothesis of a subconscious warning

Budden (1994: 6-7) regards presences and apparitions as hallucinations produced by the subject's subconscious to warn the subject about dangers to health. He makes a case that dangers are posed principally by the electrical fields and electromagnetic radiation by which in the age of technology and communications we are surrounded. Some entities warn by frightening the subject; others give advice and reassurance. In either case the subject's own body has apprehended the danger, even if the danger is not obvious to the conscious mind.

Employing a similar but more general conception, Evans sees apparitions as being sometimes projections of the subject's personal anxieties or desires onto a presumed external object which can then symbolize them and render them manageable. In this way, an entity encounter can be a kind of 'self-administered psychotherapy' (Evans 1984: 293-294). This understanding makes sense of some encounters, for example those in which the presence or apparition bestows comfort or imparts beneficial advice. However, the frightening Old Hag and incubus

encounters do not render fears manageable but rather make matters worse and cause sleepless nights (Hufford 1982).

The producer hypothesis

Evans (1984: 39, 238, 242, 256, 300-302, 307-308) proposes that the human mind contains a function or faculty of some kind which generates dreams and those waking apparitions which we regard as paranormal, and calls this the *producer.* The producer is a faculty in the mind of the percipient, but has not necessarily just an imaginative or hallucinatory function. He does not dismiss the idea that some experiences may be genuine encounters with external agents, whether living humans projecting a double, supernatural beings or extraterrestrials. In such cases, the percipient's producer would be activated by the external agent. For example, a dying aunt far away may interact with the subject's producer to cause an apparition of the aunt to the subject. Intoxication, life crises and altered states of consciousness may be varieties of enabling condition for such experiences (veridical or false) to take place. In most cases, however, he thinks it is unnecessary to posit an external agent, so that most experiences are attributable to the producer alone.

During dreams, the producer is monitoring real life even while generating a fantasy. It can incorporate sounds and sensations from the real world into the dream, for example making up a dream explanation, say, a snowstorm, for the real cold sensed by the sleeper when the sheets slide off the bed. In age-regression hypnotism, the producer creates a role for the hypnotist in the 'past' scenes which the subject is witnessing; because otherwise the hypnotist, of whose presence the subject is by necessity aware, would be out of place there. Under hypnotism, the producer fills out scenes and elaborates on memories, sometimes correctly but sometimes with details which are apposite but incorrect and stated by other observers of the original events not to have been part of the scene. It *stages a display* for the conscious mind, which it is sometimes able to deceive completely.

In all this, the producer acts like an autonomous personality. Entities in sensed-presence experiences act contrarily to the subject's wishes and in ways which the subject cannot predict. The producer seems to know everything that the conscious mind knows (*cf.* Schatzman and Fenwick 1994: 234-235). What makes Evans allow the possibility that the producer can be influenced by external agencies is that, on his

analysis, the entity seems to have access not only to all the information available to our conscious minds but also sometimes to information not known to the percipient, or even to the apparent when the latter is a living person (Evans 1984: 39, 256, 300).

The *producer* has considerable value as an explanatory hypothesis, but the idea that this faculty can be influenced paranormally by an external agent is problematical. If we assume that all paranormal perception is false, that is, non-veridical, then conceivably the component of the brain that produces it may at one time be visual cortex, at another time auditory cortex, at another time limbic structures, and so forth, depending on what sort of imagery or perception is being experienced. There is no obvious need for a single part of the brain to be a specialized producer of such imagery. But if the producer can not only generate imagery by itself (that is, false perceptions) but also can be stimulated by external agencies to produce similar imagery (in this case *veridical paranormal* perceptions), then I think one would expect it to be some discrete faculty, with its neural basis in a discrete bank of neurons or set of nuclei in the brain, dedicated to producing this odd type of imagery which we think of as paranormal. The problem then arises to identify anything which could be this physiological component susceptible of being influenced at a distance by external agents.

Evans (1984: 307) quotes a suggestion of G. R. Taylor that the production of imagery may be going on all the time, and is the product of 'the older, more primitive part of the brain'. On this hypothesis, normally the imagery is ignored or suppressed by the cortex, but if the cortex is numbed or when the imagery is loaded with an exceptional degree of affect, then it can break through into consciousness.

A neuropsychological producer

The entity seems to have access to everything the subject knows (Evans 1984: 308). This fact would be consistent with the entity being ultimately the subject himself or herself. In some episodes the experient sees himself or herself (Appendix 3A, Cases 16 and 17), and in others the entity embodies some of the experient's own characteristics (Case 9).

The entity could be a representation of some part of the subject, but a part evidently unknown to the experiencing self, the 'I'. For instance, the entity could be

produced by a separate pseudo-self, a complex of mental processes analogous to an 'I' but independent of those processes which subserve the 'I'. These processes would not ordinarily be conscious or perceptible to the consciousness which we call 'I'. Such considerations lead to the neuropsychological theory developed by Persinger to account for many putative supernatural experiences, a theory which I shall explore in detail in Chapter 5.

Summary

In this chapter I have discussed the phenomenon of the *numinous.* Beginning with the concept of the numen originally described by Otto, two distinct numinous sensations have been identified. One sensation is a religious or mystical sense of awe and abasement in the face of the mighty and wholly other. The other sensation is fear of the supernatural, supernatural fear, fear of the merely other. Whereas the numinous awe is not universally experienced, the numinous fear probably is, and therefore it was probably known to human beings or their predecessors in prehistory.

This supernatural fear is distinct from fear of wild animals and dangerous situations. It is identified by Otto as a 'debased' form of numinous sensation and for him well exemplified by the fear of ghosts. It is exclusively associated with the supernatural. We know that we can experience this thrilling fear even when just reading about or watching a drama about the supernatural, so that we know it need not have a real object. The putative object of the supernatural fear is always an unknown and personal entity which thinks more or less like a human and whose behaviour is as in a dream, not limited by physical laws.

Given the huge and more or less continuous variety of presences and apparitions, of which some present as supernatural and others present as extraterrestrial beings or humans from threatening agencies, I have maintained that none of the presences and apparitions in question are real but that all are the product of dreams and hallucinations. Some evidence suggests that the presences and apparitions may be representations of the subject himself or herself. It seems likely that the experiences originate from brain processes distinct from and independent of those which mediate what I have called the 'I', the self, that part of the conscious subject which has will.

I have not argued in detail for the purely illusory or hallucinatory nature of presence and apparition encounters, as such an argument would require a research project in its own right. However, I have given reasons and stated a position from which I can take forward my thesis that the elements of religion have a natural origin.

It would be absurd to claim that I have explained the Old Hag, incubus or any other such experiences, and I accept the cautions of Evans (1984) and Hufford (1982) concerning the inadequacy of previous purported explanations to account for all aspects of the phenomena. Like them, I think research on this subject is a matter which has been largely neglected by science for a hundred years, but the deficit has begun to be redressed, not least by their researches. Further research will show, I suspect, that the entity phenomena in question are hallucinatory and that other sorts of paranormal phenomena are also attributable to a variety of natural causes. I shall allude to some recent work in Chapter 5.

The principal task of the next two chapters is to try to clarify what neural processes occur in the subject's brain when numinous sensations are experienced, and what provokes such processes to occur. If this matter can be clarified, then, on the basis of brain development, we may be able to tell at what stage in prehistory numinous sensations could have begun to figure in the lives of our ancestors.

CHAPTER 4

THE NEURAL: BRAIN STRUCTURES AND PROCESSES

The chief thrust of this chapter is to lay the groundwork for an attempt to bring findings from neurological research to bear on elucidating the nature of subjective experiences of the supernatural. In Chapter 5 I shall propose that certain specific subjective religious or supernatural experiences are correlated with specific, identifiable types of neural processes traceable within specific parts of the human brain, and that those processes are precipitated in susceptible persons sometimes spontaneously and sometimes in certain environmental conditions. In Chapter 7 I shall try to show how, in prehistory, the occurrence of those neurological processes may have contributed to bring about the belief that non-physical intelligent entities exist and interact with human beings.

In accordance with established practice I use the words 'neural' and 'neurological' almost interchangeably to refer to brain structures and processes. Strictly, 'neural' should refer to the structures and processes and 'neurological' to the study of the former.

A survey of the main structures of the human brain, referred to in this and following chapters, is given as Appendix 4A.

Subjective experiences correlate with neural processes

The soul

The proposal that subjective religious experiences should be correlated with neurological events should not in itself be surprising or contentious, unless one wishes to maintain, rather in the manner of Descartes (1642), that the conscious component of a human being is really a non-physical entity, a soul.

One might theorize that the soul communicates with the body by receiving inputs from the body and sending outputs to the body, perhaps via the brain or a particular structure within the brain. At one time the pineal gland was regarded as the possible locus of this communication (Springer and Deutsch 1989: 320-322). On this view, all sensation, cogitation, decision making, all awareness, is carried out by the soul, not by the brain. The brain is thus not even a vehicle for consciousness but

rather is the material component of a communication system for connecting the material world with the spiritual. So, when there is a stimulus, the sight of a dangerous animal, for instance, a signal is sent to the brain and transferred to the soul, which then decides what to do. The soul communicates its decision to the brain, and the brain activates the appropriate muscles or carries out whatever response has been decided. In the sequence of stimulus-input-process-output-response, the soul plays the processing role.

What we actually see is that neurons are connected to other neurons throughout the body and brain, except in such cases as sensory nerves, whose dendrites receive information from the surroundings in which they are embedded, skin, intestines and the rest, and motor nerves, whose axons activate muscles. The brain is composed of a densely connected mass of nervous tissue, discriminable into various structures, certainly, but such that signals pass from one neuron to other neurons without any gap in which a non-physical component might reside. It is possible with modern technology to observe waves of neuronal activity spreading across the cerebral cortex, indicating that the firing of neurons in one area sets off activity in others. Examination of human and animal brains has elucidated the connections, in the form of neuronal projections, between areas all over the brain, showing the pathways by which the various functional structures communicate. In this system of complete neural continuity, there does not seem to be a place for the soul to fit in as a component of processing.

Experiments since the 1940s, when the neurosurgeon Penfield first explored the exposed brains of living patients, have shown that ideas, memories and emotions can be produced in the experience of a conscious subject by stimulating the surface of the cortex or the deep structures of the limbic system. While they may well contain snippets of memories from past experience, these ideas arise in consciousness *à propos* of nothing, unconnected with previous thoughts, and are clearly brought about by the artificial stimulus and not by an internal act of will on the part of the subject. Unless we are prepared to say that a non-physical soul can be stimulated artificially, then it seems that one of three options must follow: (1) the soul does not exist, (2) it does exist but is not the conscious part of a human being, (3) it is or includes the conscious part of a human being but is intimately associated

with and operates strictly in parallel with the electrochemical processes of the brain. If the third option is favoured, then the soul may well be regarded as a superfluous postulate for the purposes of objectively analysing mental processes, since mental processes can at least in principle be traced in terms of purely neuronal activity.

Option 2 above is compatible with some Christian interpretations. On both Biblical and scientific grounds, according to Polkinghorne (1998: 22), a human being can be regarded as a psychosomatic unity in which consciousness and the brain are intimately connected.

I think research has adequately shown that mental processes and states of numerous types, sensations, memories, emotions, the formation of speech sounds, anxiety, elation and others, can be traced to specific types or locations of neuronal activity. In the system of neural connections there is no gap which would give rise to a need to postulate a non-physical component to carry out mental processing uncorrelated with neural processes. It is therefore to be expected that mental states and processes of all kinds should be correlated each with their own specific types of neural activity. Religious experiences and experiences of encounters with the supernatural are mental processes: therefore, they too should all be expected to have neural correlates.

The neural substrate and veridicality

Both veridical and false sense perception has a neural correlate. In the case of a veridical visual perception, the neural correlate of the subjective experience is the sequence of neural activity from the retina along the optic nerves to the lateral geniculate body of the thalamus and on to the primary visual cortex, and from there to secondary visual cortices, and finally to association cortex in the temporal and frontal lobes. One suspects that only the latter parts of the sequence are strictly correlated with the conscious subjective experience. But what makes the visual experience veridical, if it is, is that the subject is seeing an object which is actually there. What makes a visual experience false or non-veridical, if it is, is not that it has a neural correlate but that the object which the subject sees is not actually there. The fact that there is a neural correlate has no bearing on the veridicality or otherwise of the perception, because there is always a neural correlate. However, the nature of that neural correlate and the conditions in which it comes about, in particular its

originating processes, do bear on how we ought to estimate the veridicality or falsehood of the perception.

I suggest that not all experiences are subject to the veridical/false dichotomy. A wish to go somewhere has a neural correlate. If the wish can be induced artificially, at the whim of a neurological experimenter or another party, is the experience of the wish invalidated? By this I mean, *is it not still a wish?* I think it is still a wish. If it occurs as a result of an illness, a fever or other disturbance of the subject's normal condition, I should think again that it is still a wish. If it is induced in the brain by the presence of an external magnetic field, again it is still a wish. When the wish arises spontaneously, without artificial stimulation, it is still, one expects, the result of some prior processing in the subject's brain, which earlier was probably set in train by an external cause.

Declarative experiences, however, *are* subject to the veridical/false dichotomy. By 'declarative experiences' I mean experiences such as thoughts that something is the case, memories of something being the case, perceptions which represent that something is the case. My thought that the neighbour's cat is in the garden is veridical – commonly we would say 'true' – if and only if the cat is in the garden. My memory of crossing the dual carriageway this morning is veridical – commonly, 'accurate' – if and only if I crossed the dual carriageway this morning and the conditions were as I purport to remember them.

Suppose that, at least in principle, a neurosurgical experimenter can induce a vision of a vase of flowers in a blindfold subject's mind, indistinguishable from the vision which he or she has earlier experienced on looking at a particular vase of flowers which actually exists in another room of the laboratory. The neural activity in the frontal lobes, perhaps also in the visual cortices, would be the same in both these visual experiences, although the activity in the thalamus would not, since in the induced experimental case no signals representing the vase of flowers would be received from the optic nerves. One vision is veridical because the subject is actually seeing the vase of flowers, and the other vision is false because the subject is not seeing a vase of flowers. It is the presence of an external object of actual vision that renders the one vision veridical. The same principle applies to hearing or any other perceptual modality.

Say one experiences a sense of presence. What would make the sensation veridical is the actual presence of an external object that one is sensing. In this case it would be a presumably conscious agent. If the sense of presence occurs in the absence of an external object, then it is a false or mistaken perception: the experience is not veridical. Hallucinations fall into the latter category.

The self

Conceding that the pineal gland is not the location of the soul, and nothing else is either, one may still be intrigued to consider whether some brain structure or complex of structures could be the location of processes which we might identify with the self, the 'I' or consciousness. I use the word 'self' as an abbreviation for 'the subjective sense of self, the I, consciousness, the self-aware part of a person'. I do not mean to suggest that a human being is anything other than a material body with consciousness, Polkinghorne's psychosomatic unity.

The idea that certain parts of the brain might carry out processes which manifest in consciousness is given plausibility by these facts: (1) of all the bodily organs, it is clear that only the brain is involved in consciousness, not, for example, the liver; (2) many parts of the brain seem to be specialized for circumscribed processes which are not conscious. The reception and initial structuring of visual data takes place without our knowledge in primary and secondary visual cortex of the occipital lobes. The movement of limbs in learned action such as walking, swimming and driving is unconscious or not fully conscious, yet involves the motor cortex of the frontal lobes to initiate the action and the somatosensory cortex of the parietal lobes to check that movements are happening, along with brainstem nuclei and the cerebellum. The autonomic nervous system, with its scattered nuclei in the brainstem and hypothalamus, is evidently unconscious, although on occasion effects of its processing, such as heightened alertness, have consequences in consciousness. All these, then, are among the brain areas not essentially involved with the conscious mind.

In the literature there seem to be two candidate areas for the location of what I have called the self: these are (1) prefrontal association cortices of the frontal lobes, and (2) association cortices of the temporal lobes together with some limbic structures.

Frontal lobes

Carter (1998: 61, 67) says that the frontal lobes are concerned with the highest cognitive processes such as thinking and planning, and with emotion.

Stuss (1991: 257-259) proposes that the frontal lobes are responsible for the highest functions of the brain, which he classifies in three layers, from lowest to highest: (1) the organization of information, which includes attention, memory, language and cognition based on autonomic, emotional, perceptual and motor data, (2) anticipation, goal selection, planning and monitoring, and (3) self-awareness. In his view, the self is related to memory function, in that a person remembers his or her own memories with a warmth and immediacy absent from mere factual knowledge. It is these episodic memories that enable recognition of what counts as the 'I' of consciousness. Episodic memories are related to frontal lobe function.

Patients with frontal lobe damage often show reduced emotional involvement in their own situation. One frontal-lobe patient was said never to be self-absorbed, never to daydream or introspect. Some patients who had had frontal-lobe surgery either denied having had the operation or acknowledged it without resentment or interest. Other patients described their own faults and vices as a curious matter of fact and without any sense of shame (Stuss 1991: 264, 272).

Stuss describes a *central executive function*, located in the frontal lobes, which makes decisions, generating output from the input received from posterior centres, including the limbic system. The control or executive function is on Stuss's second level. At the highest level is self-awareness, which does not depend upon sensory input. Inputs here are the abstract mental representations of the choices available to the executive. The location of this processing is proposed as the anteromedial prefrontal cortex (Passingham's ventral prefrontal cortex: see below), particularly on the right (Stuss 1991: 273-274).

The dorsal prefrontal cortex (behind the forehead in *Homo sapiens)* receives the main projections from the parietal lobes delivering information about the organism and its surroundings. PET scans of human subjects show activity in these areas when people generate actions at will (Passingham 1993: 156).

The ventral prefrontal cortex (on either side of the forehead and above the eyes) has connections principally with temporal association cortex and with the amygdala and hypothalamus. The ventral prefrontal cortex therefore receives processed information derived from all sensory modalities and memory together with emotional associations. Passingham argues that the ventral prefrontal cortex selects goals for action based on the current context of both perception and emotion. The prefrontal cortex has both corticocortical projections and also connections via the basal ganglia whereby it influences premotor cortex to initiate action (Passingham 1993: 154, 157, 159, 170-171, 201).

Once an association is set up between stimulus and action, the prefrontal cortex is not involved. Prefrontal areas remain inactive when human subjects repeat words that they hear, but are active in learning. When a new decision is required about what to do, the prefrontal cortex is activated, but when a response has become routine, it ceases to be activated (Passingham 1993: 220, 250-251).

The human ability to plan future action, to consider possible consequences by mental trial and error and thereby select between options for action, the capacity for voluntary action in the strongest sense can be attributed to development of the prefrontal cortex. In the course of primate evolution, human beings have acquired not only the largest brains but also the largest proportion of prefrontal cortex. A consequence of the prefrontal cortex reaching the size it has attained in humans may be the possibility of genuine voluntary action (Passingham 1993: 222, 236-237, 259-260).

Rabbitt (1997: 2-3, 7) discusses the concept of the central executive process to which voluntary action is referred. It is possible to distinguish between situations in which a human agent has a single feasible course of action and those in which there is a choice. Only in the latter case does the central executive have to be invoked to evaluate alternatives. Executive behaviour is accessible to consciousness, while non-executive behaviours are not. The executive has, or has access to, 'prospective memory', the ability to hold intended sequences of actions in mind over long periods so as to carry them out when appropriate circumstances arise. Rabbitt notes the resemblance between the characteristics attributed to the central executive and the criteria for commission of sin in Catholic doctrine. It is the executive, with awareness

of the self as the intending perpetrator of an act and, by virtue of a theory of mind, recognition of the consequences for others, that would be able to commit sin.

While supposed executive processes such as planning, inhibition and monitoring can be defined by behavioural examples, they need not correspond to distinct, localized neural processes (Rabbitt 1997: 8). In a similar vein, Deacon (1997: 293-297) marshals evidence against the presumption that, because human beings can process grammar, our brains need have a distinct neural functional unit identifiable as a grammar module. In his view, functional units which already existed in ancestral primate brains and carried out tasks related to behaviour in their lives have been adapted or coopted to be used in language processing in humans. Similarly, it is not necessary that there be a specific planning module somewhere in the brain; all that is necessary is that the processing for planning be carried out by one or more functional units.

Some authorities propose that consciousness is related to short-term working memory. Long-term memory is laid down by the hippocampus and adjacent temporal cortex. On the basis of human and other primate studies, short-term memory can be localized to the dorsolateral and orbital (ventrolateral) prefrontal cortices, as well as the anterior cingulate gyrus. Sensory data and stored data processed by the prefrontal cortex is given an emotional charge by projections from the amygdala which are received in the orbital prefrontal cortex (Le Doux 2000: 300-301; Davis 2000: 254).

I think it would be uncontentious to say that when a person attends carefully to something, it is the 'I' that is attending. Manly and Robertson (1997) describe results of research on attention. Attentive listening was associated with increased activity in the right prefrontal cortex, and decreased activity in the anterior cingulate cortex and posterior parietal areas, suggesting that the reduced activity in the latter was caused by inhibitory signals from the prefrontal. It is suggested that, in subjective terms, the subject was clearing the mind. The enhanced activity in the right prefrontal was found to be more specifically in the middle prefrontal gyrus. Another study in which the subject was alert waiting for stimulation to a toe showed elevated activity in parietal somatosensory areas and in the right prefrontal and a right superior parietal area. The left prefrontal showed no elevation in activity

compared with rest. Visual fixation produced increased activity in the right prefrontal and superior parietal areas.

There seems to be a consensus (Phillips 1997: 192) that there exists a central executive brain process more or less corresponding to what in traditional western philosophy was known as the will. I cannot really be different from my will, although I could be more than my will, so this process should be, or be part of, the neurological substrate of the self. I note, however, that Stuss makes self-awareness something higher than the central executive (see above).

Temporal lobes

Ramachandran (1999: 228, 249, 252) proposes that the sense of self and consciousness are mediated only by certain structures, and lists these as parts of the temporal lobe, the amygdala, septum, hypothalamus, insula and the cingulate gyrus. Commenting that the central executive or control process is generally thought to be a prefrontal function, he suggests that subjective experience occurs as a correlate of a brain process which connects perception with emotions or goals. The self traditionally is that which makes choices based on perception, emotion and goals. Here, I suggest, perception includes both current perception and background knowledge from memory, while emotion includes the emotional associations of knowledge of one's current state. The self is then a process by which areas of the brain which mediate perceptual and motivational functions influence those areas concerned with action, particularly motor functions. Presumably on this ground, Ramachandran adds to those areas listed above the supplementary motor areas (SMA) of the frontal lobes, saying that consciousness has been defined as 'a conditional readiness to act'.

Peringer and Makarec (1992: 220) propose that the sense of self is associated with patterns of electrical activity in the limbic structures and adjacent cortex of the left temporal lobe. This is where interaction can take place between processes of the limbic structures mediating internal data and those of the association cortex mediating data ultimately from external sources. A sense of self requires a memory containing symbolic (linguistic) sequences and image-based representations. It is believed that memory or, at any rate, the store and recall function, is principally represented in the temporal lobes.

In a series of laboratory experiments, subjective experience resulted from electrical stimulation of the subcortical structures of the temporal lobe, and not the cortical gyri. Limbic activation may therefore be necessary for bringing percepts mediated by the temporal cortex to conscious level. The attachment of emotional or motivational significance may be not just a dispensable additive but in fact the prerequisite for percepts and memories to reach consciousness and assume 'experiential immediacy' (Gloor *et al.* 1982: 140-141). If this is so, then it would seem that having a sense of self is acutely dependent on the amygdala and hippocampus.

Deacon (1997: 451-452) argues that consciousness is possible only by means of symbolic representation, whereby we represent ourselves to ourselves, and that symbolic thinking is a linguistic phenomenon. Similarly, Jaynes (1976: 66-67, 101-103) contends that consciousness depends on a linguistic faculty, mediated by three areas of the brain: Wernicke's area, Broca's area and the supplementary motor area. Wernicke's area is of course loosely defined, but is in the temporo-parietal region centred on the angular gyrus, which curves round the end of the Sylvian fissure. Broca's area is in the premotor cortex of the frontal lobe, and the SMA is of course also in the frontal. Broca's area is related principally to speech. It is Wernicke's area that seems to be crucial for the understanding of language, whether heard, read, spoken or written.

I do not think it is certain that thought must be linguistic. Bisiach (1988: 464, 476-479) defines thoughts as 'non-linguistic statement representations expressly conceived as neurodynamic structures bearing information (about actual or simulated states of affairs in the world) in active memory'. Meaning is not ascribed to these representations by a linguistic process but is 'intrinsic and immediate'. He notes that so-called 'inner speech' is fragmentary and asyntactic, and suggests that it consists of linguistic components merely entrained by normal, ongoing non-verbal thought processes. An important part of his argument is that an enormous quantity of prior knowledge is accessed and evaluated whenever we solve a problem, and this may have to be processed in parallel. He argues that inner speech, being sequential, could not cope with the quantity of information. The representations which we store are not linguistically encoded but may be records of the appearance of objects as given. Such

unencoded records later allow us to elaborate properties of the objects which we could not have anticipated the need to know about at the time when we laid down the memory. It seems to me that Bisiach makes a cogent case for non-linguistic thought, and commonplace examples such as listening to music, mathematical thinking, dreaming and daydreaming come to mind (Kertesz 1988: 460). In the end, both linguistic and non-linguistic thinking seem to have their part in consciousness.

The functioning linguistic areas are located in the left hemisphere. The temporal lobes are concerned with memory. Apart from the brainstem, hypothalamus and septum, the brain structures concerned with emotion are the amygdala and hippocampus, deep within the temporal lobe. On this basis, if the self can be located, then it should be centred in the temporal region of the left hemisphere.

Conclusion

One understands why Passingham (1993: 203-204) expresses caution about attempting any sort of synthesis concerning localization of brain function. There is strong evidence that the initiation of voluntary action, and central executive function generally, is a prefrontal phenomenon. Yet I noted above that Stuss, while emphasizing the role of the frontal lobes, counts personal memory and emotion as essential to self-awareness. Memory of events, declarative memory, is particularly related to temporal-lobe function: memories seem to be laid down by the hippocampus, a limbic structure deep in the temporal lobe, and stored in the cortex, though not necessarily in the temporal cortex (Greenfield 1996: 131; Bear *et al.* 2001: 752-758; Davis 2000: 254).

From the evidence, it seems that the will is a prefrontal phenomenon, whereas the reflective awareness of self, including memories and with its possibly linguistic-symbolic basis, is largely a temporal-lobe phenomenon. As noted above, the ventral prefrontal cortex has copious connections with the temporal cortex and associated limbic structures. Altogether, while it is fairly clear that such areas as the occipital lobe do not contribute to neural processing attributable to the self, it would seem premature to dismiss from consideration any of the prefrontal, temporal and temporo-parietal (Wernicke's) areas, the cingulate gyrus or the temporo-limbic structures (amygdala and hippocampus).

Left and right hemispheres

Specialization

In the neurophysiological literature, hypotheses regarding the normal function of a brain structure are often based, from necessity, on studies of pathological cases which afford a relative isolation of that structure not available in normal life. One must bear in mind that disturbances of localized brain function caused by defective development or by trauma may produce symptoms of either hyperactivity or hypoactivity, depending on the exact nature of the lesion. In other words, pathological cases may demonstrate the normal function exaggerated or the normal function reduced or suppressed. The conclusion to be drawn may therefore not be obvious at first glance.

The most obvious specialization of the hemispheres is handedness. About 92 per cent of humans are right-handed, and therefore left-hemisphere-dominant for hand usage. The proportion of right-handers seems to have been constant since prehistoric times. While other animals, chimpanzees for example, have handedness, the proportion of left- and right-handers among them seems to be nearly equal (Bear *et al.* 2001: 655; Springer and Deutsch 1989: 142).

The second well-known specialization of the left hemisphere is its language dominance. Of left-handers, 70 per cent still have left-hemisphere dominance for language, like virtually all right-handers. In the great majority of people, therefore, it is the left hemisphere that contains Wernicke's area, centring on the posterior region of the superior gyrus of the temporal lobe, and Broca's area, in the premotor cortex of the frontal lobe. Wernicke's area is concerned with interpreting heard and written language and with generating language to be spoken or written. Broca's area is concerned with speech (Bear *et al.* 2001: 655-656; Springer and Deutsch 1989: 176-177).

Springer and Deutsch (1989: 17, 204-206, 284-285, 307-311) discuss research indicating that the hemispheres may have different strengths. While the left hemisphere processes syntax, the right hemisphere seems to contribute the semantic and contextual aspects of language, meaning as opposed to structure. The left hemisphere processes sequence, timing and arithmetic, while the right hemisphere seems to have an advantage in spatial and topological comprehension, and in

drawing pictures. For the appreciation of music, the left ear (and right hemisphere) is preferred by the untrained; but trained musicians prefer the right ear (and left hemisphere), perhaps because their musical understanding is formalized. When Ravel suffered a stroke and developed an aphasia (so that presumably the stroke was in his left hemisphere), recognition and appreciation of music was undiminished, but he could no longer read, compose or play music. There is a widespread popular idea that the left hemisphere is logical, analytical and verbal, while the right hemisphere is intuitive, holistic and artistic.

Using studies which indicate that the right hemisphere is typically slightly larger, in particular containing more white matter, and has a higher proportion of association cortex, Goldberg and Costa (1981: 145-156) have proposed that the right hemisphere has more inter-area connections, while the left has more dense intra-area connections. On their theory, the neural organization of the right hemisphere favours a greater ability to cope with complexity and integrate a variety of information, while the left hemisphere is better able to focus on more closely defined and repeated tasks. However, they stress that each hemisphere can take on many of the tasks of the other, and does so after injury; there is no fixed specialization.

Some reports indicate that patients with damage to posterior areas of the right hemisphere cease to dream, giving rise to the hypothesis that the right hemisphere is the source of dreams, which tend to be highly visual and not clearly sequenced. However, in an experiment, patients who had had the corpus callosum resected and whose left and right hemispheres therefore could not communicate directly (see below), were able to describe dreams on being awakened from REM sleep. The fact that they were able to talk about dreams indicates that the left hemisphere had access to at least some of the content, which was presumably therefore stored in the left hemisphere.

Electroconvulsive shock therapy has long been applied in cases of intractable depression, and is frequently effective in relieving the condition. When it is applied bilaterally, confusion and memory loss are common side effects. If applied unilaterally, it is more effective on the right side of the head. Consistently with these results, research on epileptic patients who were also psychotic appears to indicate that schizophrenic patients had an epileptic focus in the left hemisphere, while those

with affective psychosis (manic depression) had a focus in the right (Springer and Deutsch 1989: 278-279).

Beaton states that temporal-lobe epileptic subjects with a right-side focus tend to be emotionally labile, while those with a left-side focus are more concerned with philosophical ideas and their own place in the scheme of things. He agrees that evidence using a variety of methods points to an association of schizophrenia with left-hemisphere dysfunction, but is unconvinced regarding the association of affective disorder with right-hemisphere problems. In fact, he cites evidence that depression often follows damage to the *left* hemisphere, while damage to the right hemisphere may produce indifference or even euphoria. He notes that right-hemisphere lesions have been known to impede recall of emotionally charged matter: hence the indifference (Beaton 1985: 236, 247, 264, 271). To reconcile those results, a layman might surmise that the effect of electroconvulsive shock therapy is to suppress an overactive depressive right-hemisphere function.

Using a range of evidence, Ramachandran (1999: 133-136) proposes that the left hemisphere seeks to operate with a stable model of the self, body image and the surrounding world, built up in the course of life, whereas the right hemisphere is alert to discrepancies. When discrepancies are noticed, the left hemisphere tries to integrate them into its model or framework, and if it is unable to do so, ignores them. If the discrepancies are too great, the right hemisphere forces a change to the model. However, if the right hemisphere is damaged and is unable to force its disquiet upon the left, then the left hemisphere carries on with its model in the face of conflicting evidence. The maintenance of a stable model of oneself and one's relation to the world is of survival value. The brain is constantly bombarded with sensory information and cannot take all of it into account. If a human being or any other organism had to revise its model for every small apparent discrepancy, or had to investigate every apparent discrepancy to see whether it was real, then it would be indecisive in the face of events. To avoid predators, to seek prey and to survive, an organism cannot afford to be indecisive. It is better to operate with a constant model that is mainly correct – or, rather, effective for daily life – even if it contains some inaccuracies, than to keep changing the model. It is worthwhile to maintain a stable model even if that requires a degree of self-deception. At the same time, gross

discrepancies cannot be ignored. It makes sense, then, that the brain should have a tendency or operator to resist changing its model, but also a mechanism or operator to force a change in the event of gross discrepancies. Evidence indicates that those operators are located in left and right hemispheres respectively.

While it has been suggested that the right hemisphere is the locus of emotional processes, a study by Vingiano (1989) concludes that the right hemisphere subserves negative affect and the left positive. On this hypothesis, subjects with left-hemisphere dominance should be more confident and outgoing, with a greater propensity to egotism; right-hemisphere-dominant people should be more shy and have more doubts about their worthiness. This hypothesis is consistent with the lateralization of maintaining (left) and doubting (right) the working model of the self and the world as proposed by Ramachandran (see above).

Further evidence for this hypothesis comes from Davidson (1995), who presents evidence for affective differentiation between the hemispheres, but relates this primarily to the prefrontal cortices, particularly the cortex at the frontal poles. Negative attitude and behaviour is associated with elevated activity at the right frontal pole and positive with left frontal activity. Patients who developed mania following brain injury were more likely to have sustained damage to the right frontal lobe, and those with damage to the left had more severe depressive symptoms. Those with a more active right frontal at rest were more prone to be made depressed on encountering depressive stimuli, and the reverse was the case for subjects with generally more active left frontals. Activity was measured by EEG and by PET scans. In studies of babies and infants, differences between left and right frontal activity were found, and correlated with the degree of boldness or timidity observed in circumstances such as temporary separation from the mother, the availability of unfamiliar play objects and the sudden appearance of a remote-controlled robot. The children with relatively more left frontal activity were bolder than those with relatively more right frontal activity.

While one hemisphere may dominate most of the time, it seems that effective hemisphericity can alternate in the same person. The alternation can even be provoked by something as trivial as breathing through one nostril rather than the other. At any time one nostril tends to be more open than the other, and there is

alleged to be a natural cycle or alternation. Studies have shown increased activity on EEG in the contralateral hemisphere when a subject is forced to breathe through one nostril. Other work on unilateral nostril-breathing related enhanced verbal skills to breathing through the right nostril and enhanced spatial skills to breathing through the left nostril (Backon and Kullok 1989: 212).

Gordon (1989: 47-53) cautions against a simplistic idea of lateralization, stating that the popular belief in the analytical left hemisphere and holistic right hemisphere is 'based on embarrassingly little evidence'. But he does agree that on certain tasks one hemisphere tends to perform better than the other. Brown and Kosslyn (1995: 79), while agreeing that there is evidence for hemispheric specialization, also caution against overestimating it.

Communication

The neocortices are able to communicate via the corpus callosum, and the subcortical structures communicate via the smaller but more numerous commissures. Exactly what is communicated is not known.

The traditional view is that specific, contextualized information is shared by the cortices over the corpus callosum, while only crude, low-resolution data can be passed via the commissures. Experiments with patients who have had the corpus callosum resected appear to bear out this view. For example, a picture of the present Queen was shown in a patient's left visual field, which therefore was apprehended only by the right hemisphere.[1] The patient was able to say that the person was female, and rich although she did not work. Note that at this point the speech centre in the left hemisphere was describing what the right hemisphere had seen. When the same picture was afterwards shown in the right visual field, so that the left hemisphere apprehended it, the patient identified the person as the Queen, but insisted that he had not seen the picture before. On the first showing, only categorical rather than specific information seems to have been communicated from the right to the left hemisphere (Liederman 1995: 453-457). In another case frequently cited in the literature, a split-brain patient was shown a photograph of a nude person, in her

[1] Each eye sends nerve projections to primary visual cortex in both left and right occipital lobes, but the field of vision on the left of each eye is projected to the right hemisphere, and the right field projected to the left hemisphere.

left visual field and therefore to her right hemisphere. She began to giggle but could not identify what was amusing (Bear *et al.* 2001: 654).

A split-brain patient was shown on the right (therefore left hemisphere) a picture of a chicken claw, and asked to select with his right hand from three drawings: fruit, chicken head, hammer. He chose the chicken head. On the left (therefore right hemisphere) he was shown a picture of a snow scene, and asked to select with his left hand from three drawings: toaster, shovel, lawnmower. He chose the shovel. When asked why, he said that one had to clean out a chicken shed with a shovel. The right hemisphere, without speech, could not contribute to the explanation. It seems that his left hemisphere, unaware of the snow scene which had presumably prompted the right hemisphere to select the shovel, rationalized the selection according to the information available to it (Springer and Deutsch 1989: 330-331).

Independence

The proportion of the brain which is duplicated – neocortex, limbic system, basal ganglia – is many times larger than that which is singular – such as the brainstem, septum and pineal gland. Each hemisphere has a complete set of components in parallel. A hemispherectomy is an operation which removes the entire cerebral cortex of one side. When this has been performed on infants with congenital brain defects on one side, they have grown up able to function as normal people, with no obvious lateralization effects. Where the left cortex is removed, the right hemisphere seems to be able to acquire even language ability. In adult cases of left hemispherectomy there is impaired language ability but some recovery. When the right hemisphere was removed from one adult patient, the patient improved, as if the damaged right hemisphere had impaired the function of the left (Springer and Deutsch 1989: 182, 234-236).

Dolphins cannot sleep for hours like us, because they have to breach the surface every so often to breathe all day and night. However, electroencephalographs have shown that they are able for two hours at a time to have one hemisphere dormant while the other continues awake, and to alternate the two over half a day (Bear *et al.* 2001: 618). While the case is not human, this point illustrates the potential independence of the hemispheres in a mammalian brain.

On a *prima facie* basis, therefore, one would expect that the two hemispheres of the human brain should have some degree of independence and the possibility of parallel functions. However, all healthy people seem to have a single consciousness and personality, in the maintenance of which presumably both hemispheres of our brain contribute and collaborate seamlessly.

In a study of a split-brain case, the patient was asked to arrange some blocks to match a pattern seen on a card, but using only the right hand, and consequently the left hemisphere. The right hand took some time in the process, and the left hand, controlled by the presumably more spatially orientated right hemisphere, kept reaching in to push the right hand away and do the task itself, so that the experimenter had to restrain it (Bear *et al.* 2001: 654).

In the literature there is now a collection of split-brain 'alien hand' cases in which the left hand interfered with what the right hand was doing. For example, a woman took hours to get dressed because, when she selected something to wear with her right hand, the left hand would select something else, usually more colourful, and *she* (that is, the left hemisphere) could not make the left hand let go. She had to call someone to help her prise the fingers open. Another woman attempted to hug her husband with one arm while the other pushed him away (Carter 1998: 49-50).

As speech and writing are nearly always controlled by the left hemisphere, the right hemisphere does not normally have a chance to express itself in language, since the corpus callosum transmits excitatory and inhibitory signals which ensure cooperation (Liederman 2001). It may be that the left hemisphere takes on any task demanding a linguistic response and inhibits the right from participating (Carter 1998: 50). Even when this inhibitory influence is removed, as in a split-brain patient, the right hemisphere usually has too little linguistic capacity to be able to write or otherwise spell out an utterance. In a striking case, however, a boy who had had the corpus callosum resected (patient P.S.) possessed the normal left-hemisphere capabilities, but also seems to have had considerably more than usual linguistic capacity in the right hemisphere. He was able to deliver responses by hand using scrabble letters in answer to questions presented visually to one hemisphere at a time. Asked about likes and dislikes, the right hemisphere (left hand) consistently gave lower evaluations than the left. When asked what he wanted to do when he

graduated, the right hand answered 'draftsman', but the left hand (right hemisphere) spelled out 'automobile race[r]'. The investigators concluded that each hemisphere in this patient had a sense of self and its own ability to make evaluations and set priorities. They suggested that, in the absence of a sophisticated linguistic capacity, the organism (in this case, one hemisphere) 'functions mainly at the perceptual motor level', but that, when a linguistic system is added, 'a human being with the capacity to value, aspire and reflect' comes into being (LeDoux and Gazzaniga, cited by Springer and Deutsch 1989: 323-325; Carter 1998: 50-51).

A number of studies of responses in both normal and split-brain subjects appear to have shown that the linguistic competence of the right hemisphere is limited to that of a child. It can identify words and has the auditory lexicon of an 11-16-year-old, but its symbolic competence is limited to naming or reference, the relation between a lexical item and what it designates. In relating arbitrary names to arbitrary shapes it outperforms the left hemisphere. However, when the semantic requirement includes dealing with relationships between symbols, relations between lexical items themselves rather than between their objects or designations, the right hemisphere is unable to cope. It has been suggested that this ability is developed between the ages of 6 and 12, and the right hemisphere is left at the level of a 6-year-old (Goldberg and Costa 1981: 159-161).

Springer and Deutsch (1989: 322-323) report the opinion of Eccles that commissurotomy does not split consciousness. He makes a distinction between *mere consciousness,* as shared by humans with animals, and thought, which is mediated by language. The patient who smiles when only her right hemisphere sees a nude picture does not know why she smiles, because only the left (linguistic) hemisphere can think or know. However, it would be hard to deny that patient P.S., described above, qualifies as being able to think with the right hemisphere. Carter (1998: 51) raises the idea that we might be carrying another personality around in our right hemisphere, one who is unable to communicate, 'a mute prisoner'. Yet without being able to communicate interactively, ask questions and receive answers from other people, ask oneself questions internally and think things out sequentially, linguistically, in an internal dialogue (*cf.* Dennett 1991: 195-196), learning and growing from birth onwards, one imagines such personality as there might be would remain rudimentary.

Epilepsy

Epilepsy was known in ancient Greece as 'the sacred disease', and it has long been commonplace for experients and observers to make a connection between epileptic conditions and quasi-religious experience, particularly spirit possession (Saver and Rabin 1997: 499-500). A number of modern writers have observed that some epileptic patients are subject to paranormal or religious experiences in the course of or immediately before or after seizures, and that some patients develop a long-term religious turn of mind. I propose here to delineate the neural events which give rise to seizures and the types of experience reported by subjects, and in the next chapter to discuss the conclusions drawn by recent authors about the neural basis of certain kinds of supernatural experience.

Seizures

Most people have heard of, even if they have not experienced or witnessed, epileptic seizures of two traditional types, *petit mal* and *grand mal,* as they are known in children. *Petit mal* is an 'absence' in which the subject stops paying attention and is still, perhaps staring, with arrested speech, for a few seconds or more. Sometimes there are automatisms such as lip-smacking. *Grand mal* is a motor seizure with convulsions (Greenfield 1996: 56). A generalized seizure affects both hemispheres of the brain and causes convulsions and complete loss of consciousness. In the postictal state, on recovering consciousness the patient may remain disorientated for some time. At worst, a patient may go into *status epilepticus,* a medical emergency indicated by repeated generalized seizures without recovery of consciousness in the interictal state (Leppik 2001; *cf.* Shorvon 1994: 15-16, 21-23). In fact, there are numerous gradations and varieties of seizures. Epileptic conditions can be treated by drugs and, in less tractable cases, surgical excision of the epileptogenic tissue at the focal point of onset.

A seizure is an abnormal excitation of a population of neurons in an area of the brain, which begin to fire synchronously. Neurons stimulate adjacent neurons to fire in a chain reaction, which has a tendency to spread to adjacent populations of neurons, sometimes across the entire cortex. Seizures may begin in any part of the cortex or limbic system: frontal, occipital, parietal and temporal seizures are all well documented. When motor areas of the frontal cortex are affected, a tonic seizure with

contraction of the skeletal musculature may result, or a clonic seizure with convulsive movements in which the muscles contract and relax repeatedly. When a seizure affects only one side of the brain, the patient may still be able to communicate if the unaffected side is the language-dominant hemisphere, usually the left. As a seizure may begin in one area of the brain and spread, the major symptoms manifested by a patient may indicate a secondarily excited area, for example, motor cortex, rather than the focal point where the activity began (Noachtar 2001, Ebner 2001: 175; Weiss *et al.* 2000: 156).

The temporal lobes, including both cortex and deep temporal structures (limbic components), are much the most common areas for the onset of seizures. The amygdala, hippocampus and parahippocampal gyrus are among the parts of the brain with the lowest threshold for epileptic activity (Ebner 2001: 172).

Seizures are characterized by distinctive electroencephalograph readings which show synchronous or high-amplitude waves and spikes. Seizure EEGs are of various recognizable types. Electrodes can be placed at diagnostic points over the scalp and sometimes intracranially to show activity in different regions. If recording is under way when a seizure begins, its progress can be followed across the affected areas of the brain (Dinner 2001).

Because of its copious reciprocal and looped internal connections, the neocortex is susceptible to runaway excitation once a focal seizure begins (Bear *et al.* 2001: 613). Monkeys as well as humans may suffer (Springer and Deutch 1989: 27). Damage to an area of neural tissue may cause it to become more excitable. Epileptic conditions therefore typically result from congenital abnormalities or injuries sustained in the course of life such as to produce, for example, cortical malformation, tumours, calcification of neural tissue, or cysts forming below skull fractures. Brain imaging techniques can be used to identify the location and types of lesions (Ruggieri *et al.* 2001). The incidence of epilepsy is higher among children than among adults. Above the age of sixty, the incidence of epilepsy rises again, as a consequence of degenerative disorders (Ebner 2001: 169).

An aura is a subjective experience which may constitute the sole manifestation of a simple partial seizure, but in clinical cases auras usually progress after a few seconds or minutes into a complex partial or a generalized seizure, in

which the subject loses consciousness. Frontal lobe seizures are predominantly characterized by motor symptoms unaccompanied by auras. Excitation of the somatosensory areas of the parietal lobe may produce auras taking the form of tingling or numbness in certain parts of the body. Abdominal auras, often experienced by temporal-lobe epileptic subjects, consist of gastric or nauseous feelings and are believed to result from activation of the insula. Olfactory auras, giving rise to peculiar smells, are often accompanied by memories and emotional associations, since the olfactory centres of the brain are connected directly to the limbic system (Carter 1998: 114). Auditory auras consist of sounds, arising from activation of the temporal cortex. When hallucinated voices or music are heard, temporal association cortex is again believed to be involved. Visual auras may involve seeing bright lights or dark spots in the visual field, possibly only on the contralateral side if only one hemisphere is affected; these result from activity in the occipital lobe. When visual auras extend to hallucinations of objects and human figures, temporal association cortex is believed to be affected as well. A 'psychic aura' may include visual and other hallucinations, distorted perception so that objects seem nearer or farther away than they are, or *jamais vu* or *déjà vu,* in which familiar surroundings seem unfamiliar or vice versa, and is often accompanied by anxiety or fear. Again, the temporal association cortex is affected in these cases. An aura may involve several sensory modalities (Noachtar 2001: 128-130; Ebner 2001: 177-178; Bear *et al.* 2001: 614; Davis 2000: 237).

Artificial induction of epileptiform activity

Carter (1998: 92) relates the case of a woman who was subject to panic attacks and dreamlike absences, for which she was amnesic on recovery. On one occasion when this state supervened, she stabbed another person in the heart, but knew nothing about it afterwards. As activity in the amygdala is associated with fear (*e.g.* Davis 2000), it appeared that excessive discharges there might be the source of the attacks. In a neurosurgical procedure, electrodes were placed deep into her temporal lobes, terminating in and around the amygdalae. When an electric current was directed to the basolateral nucleus of one amygdala, the subject suddenly became wild and violent, but the behaviour ceased when stimulation was withdrawn.

When this part of the amygdala was surgically destroyed, the subject suffered no more attacks.

In Chapter 5 I shall discuss the theory of Persinger which purports to explain how a number of paranormal experiences can come about. Among his experiments has been the application of complex weak magnetic fields to either side of the head, using epileptic and non-epileptic subjects, while continuously recording EEG. In epileptic subjects the magnetic fields induced subclinical discharges, as shown by patterns in the EEG, and these were localized in the primary epileptogenic areas of those patients. In some cases the epileptiform activity was induced during the stimulation; in others it was 'entrained' within the following ten seconds. Also, in some cases fear and odd tastes were experienced (Persinger *et al.* 1997: 527-528).

In six epileptic patients the application of magnetic fields, using coils in a helmet suspended above the cranium, resulted in epileptiform activity, as measured by EEG using both scalp and intracranial electrodes. Intracranial electrodes are used clinically to monitor the limbic structures within the temporal lobes, the hippocampal formation and amygdala. The discharges resulted on cessation of the fields, which suggested that change was more important than the mere presence of a field. Again, the enhanced activity was observed to arise in the primary epileptogenic zones of those patients. In a non-epileptic control subject, no increased activity was observed using only scalp electrodes (Fuller *et al.* 1995).

A woman who suffered from temporal-lobe epilepsy with accompanying visual hallucinations was studied using EEG and deep intracranial electrodes (Weingarten *et al.* 1977). The subject's seizures had a focus in the right amygdala and were sometimes generalized bilaterally and over the whole cortex. During spontaneous seizures she sometimes saw objects, such as a grinning cat or a menacing figure like her father, and once a scene of people storming a castle. Using the electrodes to stimulate the amygdala, hippocampus and temporal gyri, it was possible to induce localized seizures limited to the temporal lobe, and the patient experienced 'hallucinations' (or possibly vivid memories) of being a child at her old high school or in the back yard of her house. After the woman had a right temporal lobectomy, the seizures and hallucinations ceased. Similar stimulation procedures

carried out on some other subjects produced auras including gastric and tingling sensations, and seven reported dream-like experiences.

Fear and the amygdala

Davis (2000: 218, 237), citing Gloor, states that the most common affective experience in temporal-lobe epilepsy is fear, coming suddenly and ranging from mild anxiety to intense terror, sometimes accompanied by flashbacks or hallucinations. With few exceptions, authorities seem to agree that the focal point of neural processes concerned with fear, anxiety and the response to threat is the amygdala (Le Doux 2000: 301).

On the basis of studies of rats, Davis *et al.* (1997) distinguish between fear, as a short-term response to perceived danger, and anxiety, as a longer-term state of alertness induced by threatening stimuli to which it is not possible to react. Surgical and chemical studies indicate that fear is mediated by the central nucleus of the amygdala and anxiety by a nearby nucleus, the bed nucleus of the stria terminalis. They hypothesize that natural selection would favour those organisms having separate structures to process fear and anxiety; on the ground that, if there were only one structure, it might become saturated by the influence of anxiety-inducing stimuli, so that the organism would have no means of responding to a suddenly present danger requiring immediate reaction. Having two allows the organism to maintain an anxious state of readiness, while retaining the ability to react to immediate danger.

The amygdala receives projections from the temporal visual association cortex and is involved in facial recognition in both monkeys and humans. It responds to facial expressions of anger and fear in conspecifics (Beaton and Aggleton 2000: 499-501). An angry face is itself a sign of threat, and a fear expression in one animal may alert its fellows to danger – for example, a predator – in the neighbourhood. Equally, it seems that the amygdala is responsible for bringing about a fearful expression in the threatened animal (Davis 2000: 223). The neuronal response in the left amygdala is greater for fearful faces than for happy faces. Moreover, in studies of emotional state, activity in the left amygdala was high with fear and low with euphoria (Morris *et al.* 1996: 812).

It appears that the left amygdala may be active principally in processing supraliminal (conscious) stimuli, while the right may respond principally to subliminal stimuli. Activity in the right amygdala has been correlated with activation of two brainstem structures (superior colliculus and pulvinar nucleus) which form part of the subcortical visual pathway from the optic nerves (Morris *et al.* 1999). The existence of this pathway gives rise to the phenomenon of blindsight, whereby patients who consciously are blind are still able to dodge or catch moving targets (Carter 1998: 184-189). Similarly, the amygdala appears to receive projections from the medial geniculate nucleus of the thalamus which carry auditory information. This would allow audible signs of threat to be received subliminally (Dolan 2000: 640).

Efferent projections which indirectly reach the thalamus and brainstem structures such as the locus coeruleus and raphé nuclei may enable the amygdala to detect environmental signs of danger and to promote increased alertness and enhanced motor performance (Davis 2000: 216-217; Davis *et al.* 1997: 306).

It is hypothesized that the amygdala, by virtue of its subcortical projections from and to brainstem structures, provides a system for rapid and *preconscious* recognition of signs of potential harm together with an automatic promotion of physiological conditions to enable the organism to act (Morris *et al.* 1996; Adolphs and Tranel 2000: 596-597, 602, 614). It is also suggested that the amygdala can initiate access to memories of past experiences – that is, prior learning – to ensure appropriate response to anticipated danger (Dolan 2000: 639).

These mechanisms allow fear and readiness to deal with threat to be promoted without conscious awareness of an object. Of course, as the state of fear progresses, the subject becomes conscious of it, otherwise it would not be fear as generally understood. But we can be afraid without knowingly having perceived anything to be afraid of.

Kindling

Brain tissue does not become inured to repeated stimulus: instead, the more often a stimulus is applied, the more responsive to that stimulus the tissue becomes. Neural pathways become more established with repeated activation, and it appears that learning comes about by means of this process (Klix 1982: 228). *Kindling* is the

process whereby a brain structure can be activated more and more readily on successive occasions by repetition of a stimulus, and the structure's heightened sensitivity may reach a stage where it displays the same activity spontaneously in the absence of the stimulus. The amygdala is particularly susceptible to kindling.

Studies of lower primates and rats have shown that daily application of brief electrical stimulus to the amygdala, producing localized seizure activity, can result in generalized seizures after one or two weeks. Even after months of no stimulation, a single stimulus can produce a generalized seizure. Eventually seizures occur spontaneously in the amygdala thus rendered hypersensitive. Not only electrical stimulation but also exposure to certain chemical agents can result in kindling effects. Didocaine and cocaine ingestion can eventually produce spontaneous seizures. Anxiety and panic attacks induced by cocaine addiction appear to follow a kindling-like progression, and may continue after cessation of the habit (Weiss *et al.* 2000: 159, 177).

Kindling is seen as a mechanism for the development of temporal-lobe epilepsy (Aggleton and Saunders 2000: 15).

Implications for supernatural experiences

Epilepsy

I noted above that in clinical cases epileptic auras tend to progress into more severe seizures, which are recognized as such and become the object of medical treatment. However, if a person were subject to auras which did not progress into more obvious seizures, it is unlikely that the case would come to medical attention. Recognized epileptic symptoms occur with varying effects and degrees of severity, from repeated, potentially life-threatening generalized ictal events in status epilepticus to mere auras. As it is, between seven and ten per cent of the general population have at least one clinical seizure in a lifetime (Bear *et al.* 2001: 613).

On a *prima facie* basis one would expect that the cases which we call epileptic represent the tip of an iceberg, the severe extreme of a continuum which may extend from such clinical subjects through ordinary 'non-epileptic' people who have occasional flurries of abnormal neuronal activity, all the way to those who never have any such activity (*cf.* Persinger and Makarec 1993). Such occasional

flurries of activity, if limited to the initial focal region, never occasioning physical distress and not occurring regularly, could occur widely in the general population without coming to the attention of anyone except the subjects and those to whom they chose to confide the experience. Anecdotally, one suspects that occasional tingling in the limbs, odd smells and sounds, bright lights, déjà vu and other aural symptoms are not uncommon. In other words, 'paranormal' sensations due to subclinical simple partial seizures may occur in the general population with a frequency much greater than that of reported epilepsy.

A reader's letter recently published in a national newspaper[2] is so apposite to my argument at this point that I reproduce it here in its entirety.

I'm a fit, intelligent, professional woman, not stressed and have never been near death.

I am, however, a registered epileptic who has experienced all of the supposed 'out of body' phenomena as well as feelings of déjà vu, of having 'lived before' and numerous other experiences and 'auras'.

Before my diagnosis, I found all this inexplicable and confusing. At one point I thought I was to be the world's greatest psychic.

However, after my first full epileptic fit ('grand mal') 12 years ago, everything slotted into place. It would appear that I had been experiencing 'petit mal' attacks for years without realizing what they were.

Now, whenever I feel my body being tugged along behind, or above and below, I just take my medication.

In the next chapter, as well as reviewing the more obvious connections that have been drawn between epilepsy and religious experiences, I shall try to expound Persinger's theory concerning paranormal experiences as mediated by subclinical epileptiform activity, and in particular, drawing on evidence from studies of hemispheric function, the experience of the *sensed presence.*

Brain structure and function

More generally, accepting that all experience has its physiological substrate in the brain, we must consider what the consequences might be when certain structures of the brain with specific functions either (1) spontaneously malfunction, (2) are directly subjected to unusual external influences other than sensory input, (3) are fed abnormal signals from other parts of the brain, or (4) are deprived of their

[2] *Daily Mail,* 4 October 2002, page 69.

normal stream of input signals. All four of those contingencies may sometimes give rise to subjective experience. In the absence of normal input to a given structure, the experiences may be unusual, and any apparent perception may be – I would argue, is likely to be – non-veridical.

CHAPTER 5

THE NUMINOUS NEURAL: HYPOTHESES

In this chapter I state a general point of view regarding the connection of numinous experiences with particular neural substrates, and review some recent theories on the subject, before offering with reasons specific hypotheses to which I adhere. It appears to me that this area of science – not neurology as such, which is well advanced, but the relation of specific subjective experience with specific neural activity – is in its beginnings. In particular, the investigation of paranormal experience with a view to explanation in terms of neural activity and the investigation of mechanisms whereby that activity might be brought about by non-supernatural means are in their beginnings. Given the advances over the last few decades in technology for imaging activity in the live brain, I expect that within a few decades more this realm of human life will be much clarified.

Relating the numinous and the neural

Types of numinous feeling
Minor paranormal
Déjà vu, jamais vu
Tingling
Bright lights
Hallucinations
Hearing voices
Visions
Depersonalization
Out of the body experience
Near death experience
Sense of presence
Benign
Threatening
Sense of oneness
Mystical union with all being
Mystical union with the deity

Table 5.1

Table 5.1 lists a variety of paranormal and numinous experiences. It is meant to be representative but not necessarily complete. Table 5.2 lists brain structures

implicated by various researchers as being involved in paranormal and numinous experiences. Table 5.3 lists possible causes that might induce neural activity which has been correlated with numinous experience.

Brain structures identified in numinous neural activity
Prefrontal cortex
Concentration, meditation
Superior parietal cortex
Location in space, boundaries of self
Temporal cortex and hippocampus
Association, memory, language, self
Amygdala
Emotion, fear, excitement
Hypothalamus
Emotion, arousal, quiescence, bliss

Table 5.2

Aetiology of neural activity correlated with numinous feeling
Spontaneous activity
Epilepsy
Subclinical epileptic or quasi-epileptic activity
Abnormal input affecting neurotransmission
Elevated stress
External electrical or magnetic fields
Ingested chemical substances
Deprivation of input
Disruption of normal neural pathways by ingested chemical substances
Disruption of normal neural pathways by concentrated meditation

Table 5.3

A complete theory of the numinous in terms of the neural would be able to do two things: (1) correlate each type of experience with specific types of neural activity in specific locations in the brain, and (2) show how the specific neural activity is induced by specific causes. No satisfactory complete theory has been put forward, but research has been done which throws some light on both (1) and (2).

It is probably uncontentious to say that numinous or religious experiences of all kinds are the subjective correlate of *unusual* activity in the brain, at least in the

sense that most people are not having religious experiences most of the time. The general point of view which I espouse is that these experiences are sometimes – but not always – the subjective correlate of *abnormal* activity in the brain. The abnormality of the activity may be, but need not be, pathological, caused by a lesion to a brain structure. It may be simply that a brain structure is hypersensitized by the subject's ingestion of substances which mimic natural neurotransmitters, or that it receives abnormal stimulation, from an ambient magnetic field, for example, or that it is deprived of its normal stream of input, say from the senses.

Epilepsy

The idea that epilepsy or subclinical epileptiform activity is an explanation of some kinds of religious experience is of course not new. Saver and Rabin (1997: 500-502) list a collection of religious figures and people with a religious preoccupation from St Paul to the nineteenth century Ste Thérèse of Lisieux. From what is documented about them, most seem to have exhibited some pathological symptoms and were known to be, or in medical literature have been claimed to be, epileptic subjects. Among the symptoms listed are: seeing a sudden bright light, falling to the ground, hearing a voice, visions, falling with convulsive movements, constant voices, hyperaesthesia, automatisms, transient loss of consciousness, mystical states, ecstasy, déjà vu, sense of vertigo, violent trembling, and in the case of Dostoyevsky, a sense of bliss followed by a fall and unambiguous generalized tonic-clonic seizure.

Muhammad is one of the religious figures listed. Parrinder (1976: 125) dismissively states that the Prophet's behaviour is not diagnostic of epilepsy, but the description of 'pallor, appearance of intoxication, falling, profuse sweating, visual and auditory hallucinations' would seem to be at least consistent with the suggested diagnosis of complex partial seizures (Saver and Rabin 1997: 501).

Epileptic discharges may mediate religious experiences, and the lasting effect of chronic recurrence of these experiences is sometimes to produce a hyperreligious temperament or frame of mind. This is characterized by any or all of various changes in personality, such as attributing importance to oneself and events in one's own life (grandiosity), feeling things more strongly, humourlessness, writing much material which seems meaningful (hypergraphia), hypermoralism, a heightened interest in

philosophical issues and a sense of impending death. Some of these effects, if extreme, are treated medically as a psychotic condition. In psychological tests for religiosity traits, patients with temporal-lobe epilepsy scored higher than controls and on a similar level with schizophrenics (Saver and Rabin 1997: 503-504).

In Appendix 5A, I discuss Mesulam's findings of epileptiform EEG in cases of multiple personality and possession.

A homologue self in the non-linguistic hemisphere

The *non-linguistic* hemisphere is the hemisphere that does *not* process language and control speech. Usually language is processed by the left hemisphere, so that the non-linguistic hemisphere is the right. The *non-dominant* hemisphere is the hemisphere that does *not* control the dominant hand. For example, if one is right-handed, the non-dominant hemisphere is the right. The non-linguistic and non-dominant hemispheres are usually the same, and usually the right, but need not be the same. A left-handed person may still process language in the left hemisphere, so that the right hemisphere is non-linguistic but the left is non-dominant. For convenience, I shall refer to the language-dominant hemisphere as the *left,* with the proviso that in some subjects the functions are reversed, unless it is necessary to draw attention to exceptional cases.

The idea that unusual activity in the non-dominant or non-linguistic hemisphere may produce activity in the other hemisphere as a substrate of unusual experience has a history. In 1885 Myers proposed that the unconscious mind, which he believed was able to communicate with a spiritual world, was located in the right hemisphere. He drew attention to resemblances between the speech of mediums and the distorted and disinhibited speech of people who were thought, in consequence of left-hemisphere damage, to be speaking from their right hemispheres. Lambroso in 1908 also thought the right hemisphere was unusually active in mediumistic states (Harrington 1995: 15).

The bicameral mind

Jaynes (1976) proposes that up to early antiquity people enjoyed a *bicameral mind,* in which the neural processing of the two cerebral cortices was conducted with considerable independence. On every occasion when a decision had to be made,

elevated stress occurred quite normally, mediated by the hypothalamus, and this provoked communication between hemispheres. The right hemisphere never failed to give advice to the left, and so the self (located in the left hemisphere) never actually experienced *decision stress* from having to think what to do. In fact the person did not really think at all and was not even (fully) conscious. The bicameral mind began to break down about 1250 BCE and modern, conscious people were the result. I shall not discuss the theory in full, but rather make use of some of Jaynes' insights.

The cognitive function of the right hemisphere, which exceeds the ability of the left in spatial and synthetic processing, is to collate and organize information. On the basis of that organized information it can send advisory signals from its own homologous language area to the genuine language area (Wernicke's) of the left hemisphere, via the anterior commissure. The signals are typically perceived as voices, because they are sent and received by language centres. Voices hallucinated by schizophrenics today are generally admonitory, and Jaynes regards schizophrenics as bicameral survivors. (See Appendix 5B for discussion.) In experiments on patients in which the cortex of the right hemisphere was stimulated over the area corresponding to Wernicke's area on the left, admonitory voices were sometimes heard in response to the stimulation. This way the origin of admonitory voices can be located in the right hemisphere (Jaynes 1976: 87-93, 104-106, 109-111, 118).

This theory is consistent with observations of Chapter 4 that the language centre and certain other structures of the left hemisphere subserve the ego or self, and that the rudimentary right-hemisphere homologue self, when it operates independently, is perceived by the left – on occasions when it is perceived at all – as ego-alien.

If it is accepted that intrusive communications can take place between the hemispheres, more or less as described above, a number of possibilities arise. Perhaps the communications need not take the form of voices, especially if the linguistic temporal lobe is not ready to receive them as such. They could take a garbled linguistic form, the form of non-verbal sounds, or not be auditory at all. Perhaps the intrusions can take place in random situations in the absence of stress-initiated hypothalamic input, if the temporal-lobe structures of the non-linguistic hemisphere in which they originate are spontaneously activated in such a way as to

mimic the communication process. Such might be the case if quasi-epileptic discharges of a particular form take place in the relevant structures.

It is not necessary to accept Jaynes theory of the bicameral mind in full, to be able to accept the possibility of interhemispheric communication in a form such as he describes. As discussed in the previous chapter, there is evidence from split-brain patients that the non-linguistic right hemisphere has some capability, limited though it may be, to understand and even, in some people, use or utter (in writing) language. In normal circumstances its capability is suppressed because the left hemisphere takes on any linguistic task and is presumed to inhibit right-hemisphere processing.

It is plausible that in abnormal circumstances right-hemisphere quasi-linguistic or proto-conscious processes may be activated, and that signal patterns arising from those processes may be communicated via the commissures or corpus callosum to the left hemisphere. By 'proto-conscious processes' I mean processes which, if they took place in the left hemisphere, *would be* part of the conscious self. Taking place in the right hemisphere, such processes are isolated and not part of the conscious self, but rather part of what we might call a 'subliminal' or homologue self. In the preceding chapter, particularly taking into account Eccles' opinion (reported in Springer and Deutsch 1989: 322-323) that without a fully fledged linguistic function the right hemisphere does not think, I proposed that the right-hemisphere homologue of the self is only rudimentary. We should therefore expect communications not to be necessarily coherent. Certainly, communications should not be expected to be bidirectional: they are not conversations between equal participants, sequences of responses each of which takes into account what has gone before.

Normally the two hemispheres continually and successfully communicate information and excitatory and inhibitory signals, operating together as a single coherent brain. What I am considering here is *abnormal* processing, arising either from stress or spontaneously, taking place in temporal-lobe structures which in the left hemisphere are specialized for language and contribute to the sense of self, and in the homologous structures in the right hemisphere.

Multiple personality

In cases of multiple personality and possession, it is tempting to attribute the second personality or alien spirit to the right-hemisphere homologue self. In some cases this attribution may be plausible. However, there may be more than one extra personality. In the famous case of Miss Beauchamp, there were at least three personalities (Evans 1984: 271). Psychiatrists do not universally accept the condition as genuine, and it seems that something resembling it can be induced in ordinary people by suggestion (Carter 1998: 175). This would indicate that in clinical cases it could be a matter of the single real personality acting a role temporarily and then suffering intermittent amnesia. However, if the phenomenon is genuine and neurally based, then each personality would be associated with distinct neural circuits. If this is so, there could be two or more rudimentary homologue selves, not necessarily all located in the right hemisphere.

Right-hemisphere intrusions

If the discussion so far makes sense, we are ready to pass on to a theory of Persinger and co-workers which uses these concepts to explain a variety of personality traits and paranormal experiences, and in particular the *sensed presence.*

On this theory, a person's sense of self is primarily based on linguistic left-hemisphere processes (Persinger and Makarec 1991; Persinger 1994: 1067), which occur in temporo-parietal areas including the neocortical Wernicke's area, the temporal association gyri, the amygdala and hippocampus. Given the information discussed in the previous chapter, I think it is hard to deny the prefrontal cortex, bilaterally, some role in maintaining the sense of personal identity. Even so, it is undeniable that linguistic processes, limited in most people to the left hemisphere, make a major contribution. The temporal lobes, more than any other region, also subserve memory, which enables the sense of personal continuity. The limbic structures subserve emotion and valuation of experience. It is possible, therefore, with qualifications, to accept that major functions which contribute to the sense of self are located only in the left hemisphere.

In the absence of evidence that they subserve a completely different function, it becomes plausible that corresponding temporo-parietal areas of the right hemisphere contain proto-linguistic and other processes which give rise to an

homologous sense of self. As has been discussed before, this 'self', without much language capability, would be rudimentary and incoherent. For example, it would lack the cohesiveness to be able to generate definitive signals to influence and communicate with frontal processes in the way that the left-hemisphere self is able to do. One should not think of it really as another 'self' but rather as a diffuse collection of processes, some of which are homologous to the coherent processes of the left temporo-parietal region.

On the theory elaborated by Persinger and co-workers, circumstances arise in which 'intercalation' takes place between the hemispheres. *Intercalation* is defined as the inclusion of signal sequences from one hemisphere within a time frame which allows recognition and discrimination by the opposite hemisphere. There is recognition because the receiving hemisphere is aware of a process other than its own, and discrimination because this process is not fully integrated into its own processing. As the hemispheres presumably do coprocess in an integrated way most of the time, we may ask what makes intercalation different. In answer, it is assumed that, normally, competition between the hemispheres is prevented by inhibitory signals carried by the corpus callosum. Normally, local neural processes – presumably those which are not part of a major active circuit, which may include cooperating inter-hemispheric processes – are compartmentalized, and what would be their subjective correlate remains unconscious (Persinger 1993: 915).

Abnormally, a resonance is set up between the electrical activities of left and right hemispheres, and the left-hemisphere self and its right-hemisphere homologue come temporarily into anomalous communication. The temporal cortices transmit cognitive or perceptual data via the corpus callosum and the limbic structures transmit affective nuances chiefly via the anterior commissure but also via basal amygdalar nuclei and brainstem pathways. This communication can disturb the subject's sense of identity and continuity, and may be the cause of diplopic sensations such as out-of-the-body and near-death experiences, déjà vu, jamais vu, a feeling of loss of self, voices, thoughts which seem to be imposed from outside, panic attacks, and commonly negative affect (Persinger and Makarec 1991: 1244; Munro and Persinger 1992: 899, 903; Richards et al. 1992: 667; Persinger 1993: 915-918; Persinger 1994: 1060, 1063).

In particular, when the right hemisphere homologue of the self intrudes into left-hemisphere awareness, then the subject may experience the *sense of a presence* (e.g., Persinger and Makarec 1991: 1244; Persinger 1993; Persinger 1994: 1059). The concept makes best sense to me if the other experiences, strangeness, déjà vu and the rest, should be the result of a variety of diffuse communications, whereas in the sensed-presence experience the right-hemisphere homologue is imposing itself rather more coherently upon the awareness of the left hemisphere. Phrases used to describe this condition include 'intrusions of right-hemisphere processes into left-hemisphere awareness' (Tiller and Persinger 1994: 1530), 'left-hemisphere "awareness" of the right-hemisphere homologue' (Munro and Persinger 1992: 899). Among the experiences which are referred to the *sensed presence* and this aetiology are those of 'the stranger', 'the other' (Suedfeld and Mocellin 1987: 919), 'entities', 'old hags', spiritual beings (Persinger 1993: 916), someone standing nearby (Persinger 1994: 1067), muses, succubi, demons and extraterrestrials (Persinger and Makarec 1992; Persinger et al. 1997: 534).

Process of intercalation between hemispheres

Transient intercalation may occur when either hemisphere is activated to a degree above or below its normal functioning. The most common transient is elevated activity in the right hemisphere compared to normal left-hemisphere levels, and this is the basis for intercalation resulting in the sensed presence (Persinger 1993: 917, 919). This and the reverse imbalance may also give rise to intercalation resulting in other unusual feelings and perceptual distortions.

For example, Persinger (1994: 918) gives an account of déjà vu, which I interpret as follows. Activity with its origin in the right amygdalo-hippocampal complex could be communicated through the central amygdalar nuclei to the thalamus and thence to the left limbic structures and cortex. Meanwhile, intercalation could occur at a different rate between the cortices via the anterior commissure. Thus the left-hemisphere 'self' would receive within a brief interval two sets of neuronal sequences with a common origin and therefore similar patterns, and the subject would have two experiences with similar content.

I shall not discuss other types of experience further here, but concentrate again on 'ego-alien intrusion' and the sensed presence.

Tests were made of an hypothesis that greater alpha and theta activity in the right-hemisphere rather than the left should promote the occurrence of inter-hemispheric communication and hence, on the theory, of ego-alien experiences such as sensed presence and mental diplopia. During normal waking beta activity, only small groups of neurons are discharging together. During waking alpha and theta activity, much larger populations of neurons are discharging rhythmically. Large-scale activity should encourage inter-hemispheric communication. Subjects with greater chronic waking alpha and theta should therefore also report more ego-alien experiences generally, and specifically in a setting of partial sensory deprivation. A correlation was shown in women between chronic elevated right-hemisphere theta activity and a proclivity to experience ego-alien intrusions. For both sexes, elevated right-hemisphere theta was correlated with the experience of fear in conditions of mild sensory deprivation (Munro and Persinger 1992).

People who have suffered closed-head injury may exhibit an increased incidence of intrusive experiences. Fifty such patients were questioned. Of these, ten per cent had a near-death experience at the time of trauma. Sixty-two per cent reported a sense of presence which had begun since the injury. Of twenty-eight patients who reported presences, seventy-one per cent had them on the left, only nineteen per cent on the right, and ten per cent had them on both sides. All those who had right-side presences regarded them positively: eighty-three per cent of those referred the presences to angels, and some heard voices. The sensed presences generally were correlated with symptoms such as seeing lights, sensing movement in peripheral vision, a feeling of strangeness, and also with suicidal thoughts (Persinger 1994). The cases of coherent instructions from right-side presences are interestingly attributed to 'anomalously activated' *left-hemisphere* linguistic processes (Persinger 1994: 1063). Some of those who had left-side presences heard utterances which did not make sense: one would incline to attribute those to minimally linguistic *right-hemisphere* intrusions.

In a study of patients with lesions to one or other hemisphere who experienced a sense of presence, presences were felt equally on left and right, but were contralateral to the damaged hemisphere (Brugger 1994: 1200-1201). Brugger regards the sense of self as a phenomenon not concentrated in the left temporo-limbic

area but subserved by a wider range of structures across both hemispheres of the brain. He refers to a theory of Melzack that the 'self' is represented by a 'neuromatrix', a large population of interconnected neurons which develop in unison from birth and form a coherent complex spanning both hemispheres. However, Melzack's (1990) theory is designed to account for, not the conscious 'I', but the representation of the body; because, on the evidence of phantom limb experiences, this seems to involve additional parts of the brain besides the parietal somatosensory areas.

Neurons which inhibit inter-hemispheric communication are said to be among the most vulnerable to reductions in metabolic levels of glucose and oxygen. Therefore right-hemisphere intrusions should be facilitated by lowered general metabolic activity. They should also be facilitated by subjective fragility of the self, as when a person undergoes a life crisis such as the breakup of a relationship or the death of a close relative. Depression is related to disruption of the left-hemisphere sense of self: in such a condition, right-hemisphere processes are more likely to intrude (Persinger 1994: 1067). While there is an overlap in identification of cause and effect in this part of the discussion, one can see the cogency of the case. Essentially, the left hemisphere maintains the sense of self: right-hemisphere intrusions disturb it, and also reduced cohesion of the sense of self makes such intrusions easier. Moreover, if indeed the right hemisphere subserves vigilance and doubt, constantly checking for something wrong, as discussed in the previous chapter, one should expect its intrusions to depress the subject. In more extreme cases, the negative affect introduced by right-hemisphere intrusions may cause anxiety, fear and panic (Persinger 1993: 919).

Content of sensed presence experience

The cognitive content of experience is believed to be dependent upon the specific functions of brain structures that are most active at a given moment, as is indicated by the correlation between experiences and focal activity shown by EEG, PET scans and fMRI.

Studies indicate that areas within the ventral temporal cortex and parahippocampal gyrus are involved in recognition of faces and hands. Stimulation of these cell populations may produce potential experiential representations of those

body parts. If such images are communicated imperfectly from one hemisphere to the other, then distorted images may intrude into awareness. In one case, a patient who had abnormal spikes in the right temporal EEG during distress would experience fear, then the sense of a presence, and within ten seconds a gnarled hand would appear in her left visual field. It is suggested that the odd-shaped humanoid forms which appear in the most extreme cases of the sensed presence, such as the entity and Old Hag (Appendix 3A), may be the product of such anomalous representations (Persinger 1993: 919).

Budden (1994: 20-21) seems to suggest that the entity sometimes witnessed is a hallucinated representation of the body image or homunculus from the somatosensory cortex. On the theory of right-hemisphere intrusion, we should interpret this as a right parietal homunculus being communicated imperfectly to the left hemisphere.

Inducing the sensed presence experimentally

Experiences of a presence have been induced in a laboratory setting. The experiences were facilitated by weak complex magnetic fields introduced bilaterally over left, right or both temporo-parietal regions, by means of a helmet containing solenoids. The most effective fields were those which simulated 'burst firing' patterns taken from a population of amygdalar and hippocampal neurons as observed in a temporal-lobe epileptic patient. Also used was a 'Thomas pulse', a sequence of variations on a millisecond scale. This tended to cause unpleasant vibrations through the body, and is said to have produced in other experiments coldness, shivering, a bright light and a sense of impending death.

In one experiment, subjects were seated, masked, in an acoustic chamber, and pushed a button if they felt a presence. The most frequent experiences occurred during burst firing. One woman, on receiving stimulation over the right hemisphere, reported a presence mostly behind her but also along her left side. She also had a feeling of detachment, as if she were rising up, but connected to her body by a thread. Another woman on several occasions reported a presence behind and on her left side following right-hemisphere stimulation. During this experience she felt apprehension. Some subjects reported a sense of presence on the right side whether or not they were receiving a pulse. A presence on the left side was reported twice as

often with a pulse as without, and three times as often as a presence on the right. A presence behind was reported three times as often with as without a pulse (Cook and Persinger 1997).

The sensed presence induced by environmental factors

Electrical and magnetic fields, of geophysical and artificial origin

Localized geophysical processes

Persinger and Cameron (1986) report a series of poltergeist-like occurrences in an Ontario apartment, and attribute them to geomagnetic causes.

The tenants' subjective phenomena included waking up several times at night feeling a 'presence of evil', seeing an image of a baby on the window shade, and 'feeling' the forms of a man and woman, hearing footsteps in the hallway, seeing two figures at the foot of the bed, seeing a small white light crossing the wall, hearing a swishing sound like bedclothes being moved, and the conversation of two people. The same images occurred on several nights, and eventually both tenants had had enough and vacated the property. In some of the phenomena, Hufford's Old Hag experience (Chapter 3) can be recognized. Extra events are the small white light and perhaps the odd images of the baby. The case shares with most such occurrences a senseless, baffling quality.

Two sensors were introduced to record both vibrations and magnetic fields. Only the sensor connected with a coil registered any of the events, so that they appear to have been electrical or magnetic in origin and not surface-detectable vibrations. The apartment was located 200 metres from each of two fault lines, and the region undergoes a detectable tremor about every ten years. The hypothesis was formed that the phenomena were caused by transient alternating electromagnetic fields produced by underground tectonic or 'tectonogenic' forces.

The small light could have been an objective phenomenon resembling ball lightning on a small scale and produced by the electrical activity, which, given this visible physical manifestation, was presumably more intense than before. At the same time, one tenant had her most frightening experience, a classic Old Hag.

Suess and Persinger (2001) report paranormal phenomena at the site of a former magnetite (iron oxide) mine in Ontario. The mine was closed in 1978, and since then a large hollow from which ore was removed has been filling with millions of gallons of water. Nearby is an old Ojibwa site with petroglyphs. The devout Christian owners of a farm at the site have established stations of the cross there, and visitors and pilgrims have reported spiritual experiences, including visions of angels and the Blessed Virgin, glowing colours in the sky, peacefulness and trance-like states.

The researchers suggest that the accumulating weight of water causes localized tectonic strain. Rocky outcrops containing magnetite there have sufficient magnetism to hold miniature magnets. Electrostatic fields induced by strain within the rock, extending several hundred metres into the earth, would be strong enough to orient particles in the air, causing diffraction and glows. Instruments detected magnetic fields of different intensities at various surface points, fluctuating at intervals of between 1 and 10 seconds. On the basis of laboratory experiments, these fields are hypothesized to affect the temporal lobes and limbic structures of sensitive individuals, producing opiate-like effects, and – it would seem – a sense of presence.

Above a Coptic church at Zeitoun in Egypt, in 1968-71, subjects experienced apparitions of the Blessed Virgin and of doves. Photographs showed blobs of light, and there were glows over high points of the edifice. At this period there had been an increase in local seismic activity, and earthquakes began a year after the beginning of the paranormal phenomena (Derr and Persinger 1989: 123-128).

A team from the University of Hertfordshire recently investigated the Haunted Gallery and Georgian Rooms at Hampton Court Palace and the South Bridge Vaults in Edinburgh, locations which have a reputation for being haunted. Rooms and areas reputed to be most haunted produced the greatest number of unusual experiences. In both experiments ambient magnetic fields were measured. There was no correlation with strength of magnetic field, but some correlation between *variance* of the magnetic field and the precise areas producing the greatest incidence of unusual experiences. At Hampton Court the variance of magnetic field was greater in the 'most haunted' areas than in control areas (R. Wiseman, *pers.*

comm.). These results offer support for the hypothesis that temporal-lobe structures may be directly affected by local magnetic flux.

Man-made electromagnetic pollution

Budden (1994) proposes a theory that paranormal experiences are the body's expression of a physiological malaise, which has a parallel manifestation in the allergies suffered by many experients. Causes of this malaise are constant exposure to electromagnetic fields produced by earth faults and, more often, radio-frequency (RF) radiation produced by transmitters and fields produced by power lines. Radio-frequency transmissions have two components: one parallel to the ground and another which is reflected off the ground between 500 and 700 metres away. At this intersection a 'hot spot' exists, and Budden cites World Health Organization information regarding the health implications of hot spots. This theory associates with electromagnetic disturbances not only subjective paranormal experiences but also objective phenomena often found associated in poltergeist and UFO cases, such as electrical appliances switching themselves on and off, and lights resembling ball lightning. The physical occurrences are attributed to power surges and the influence of variable electric fields, often confined to a small space around some conducting iron object.

Cases of the sensed presence from Budden are mostly associated with hot spots. The woman who saw an old man near her bed (Appendix 3A, Case 8) lived at the intersection of two RF beams from local transmitters. Tape recordings turned out blank; a kettle and the bedroom light went on and off by themselves. The woman who saw a dark figure shuffle into her room (Case 10) lived 600 metres from one large antenna, and close to another. Her radio and television sometimes switched themselves on and off at random.

The extraterrestrials called 'grays' seen by some UFO experients are said to be sensory models produced by electrical stimulation of the visual cortex. Budden points out that the grays have all features reduced except the eyes, which are exaggerated. One is reminded here of one of Hufford's cases, in which the subject saw a large dark figure, of which the only distinct feature was the piercing black eyes (Appendix 3A, Case 7).

Persinger and Cameron (1986) report research by others showing that some subjects who have been the focus of poltergeist episodes had EEG profiles with abnormal, epileptic-like temporal-lobe characteristics. In cases of hauntings and poltergeist activity, if tectonic forces are the ultimate cause, then the people involved may be exposed to repeated stimulation by the electromagnetic fields produced by underground activity. Repeated stimulation may have a kindling effect, rendering the affected neural structures more susceptible to react strongly to further stimulation. In this way, subjects may come to have more intense experiences the longer they stay in a location where they are exposed to such stimulation.

Rutkowski (1984) cautioned that the geophysical data were as yet inadequate to support the theory that tectonic strain could be a source of electrical activity sufficient to produce luminosities interpreted as UFOs or of fields which could influence the temporal lobes of human brains. In my view, Rutkowski's (1984; 1986) and others' objections to the tectonic strain theory have been fairly convincingly countered by Persinger (1985) and Little (1987). In particular, earthquakes are not stated to be the cause of geomagnetic fields which are alleged to influence human brains. On the tectonic strain theory, increased pressure or strain within volumes of the earth's crust is the primary source of the other phenomena. Earthquakes are one consequence of these pressures, and may occur long after the strain begins to increase. The generation of geomagnetic fields is another, parallel, consequence, and the alleged effects of these, in the form of paranormal phenomena, may occur without any correlation with earthquakes (Persinger 1985: 576).

Other workers have taken up the general idea that geophysical phenomena have effects on human subjective experience. For example, in a small-scale study which is acknowledged to need expansion to much larger numbers of subjects, Conesa (1997) has correlated incidence of vivid dreams and sleep paralysis with an increase and decrease, respectively, of ambient geomagnetic activity.

Budden's (1994) theory has some implications. Since in the western world we are all surrounded by RF transmissions, more paranormal phenomena should be reported in the west than in remote parts of the world. Also, there should be much more than occurred prior to the era of man-made electrical pollution, which dates

from no earlier than the middle of the nineteenth century when electricity generation and telegraphy were beginning.

Whatever the merits and shortcomings of Budden's and Persinger's theories on this subject, they are testable. A worthwhile research project would be to find out the incidence and typology of paranormal phenomena in different parts of the world and in different periods of history. Another would be to conduct a widespread survey of locations where paranormal phenomena are alleged to have occurred and determine the association with electricity cables, RF transmitters, geological fault lines, concentrations of iron ore and other possible sources of electrical or magnetic influences. Paranormal phenomena would include both objective effects on electrical appliances and detection equipment and the subjective experiences of inhabitants. As a corollary, those who have lived a long time in a location subject to unusual electromagnetic influences should show elevated susceptibility to paranormal subjective experience, in that their brains should have been rendered hypersensitive by kindling effects. I am not aware that any such surveys on a large scale have been conducted.

Stress

Intolerance of ambiguity

Above, I noted the possibility of isolating objective from subjective phenomena in paranormal events, where both might be attributed to electromagnetic radiation or ambient fields. Houran and Lange (1996) emphasize that the subjective experience and objective occurrences in paranormal events such as poltergeist episodes may have different causes.

Objective phenomena such as inexplicable movement of objects and erratic functioning of electrical equipment may be unrelated to the subjective experience of those who are present. Unexpected occurrences which would not be regarded as paranormal by an average observer may assume importance for a subject who is disposed to look out for paranormal events. When an ambiguous objective occurrence takes place, such as, perhaps, an odd sound or a flickering lamp, the subject may interpret it as confirmation that a paranormal episode is under way.

Houran and Lange (1996: 1308-1310; Houran 1997: 340) propose that, as described earlier, subjective experiences may be caused by the action of electromagnetic fields on structures of the temporal lobes, leading to quasi-epileptic microseizures. They cite research showing a connection between poltergeist phenomena and physical energies such as ionizing radiation, electrostatic fields and geomagnetic activity. They further propose, however, that stress and suggestion alone may be sufficient to set these neurological processes in motion. The observation of ambiguous objective occurrences may be enough to trigger them. The content of the subjective experience, which may reach the stage of hallucination, is determined by the subject's expectation and by the context: for example, a haunted house.

Those who are unusually alert to environmental cues, who have an intolerance of ambiguous or unexpected events around them, and those who are responsive to suggestion and hypnosis should be more likely than the average person to have paranormal experiences. Houran and Lange (1996: 1312; Houran 1997: 339-340) cite research consistent with this hypothesis. One wonders, however, whether it may be too easy to define these susceptibilities circularly in terms of each other. Even so, alertness to change in the immediate environment should be determinable by psychological testing independently of susceptibility to paranormal experience.

Isolation and cold

Suedfeld and Mocellin (1987: 36-41) cite cases of sailors, mountaineers and polar explorers in small parties or alone, among whom the sense of presence seems to be almost common (see also Appendix 3A, Cases 22-25). Interestingly, neither they nor I have found any reports of the sensed presence among explorers in tropical countries or even in hot deserts. Low temperatures, monotonous winds, isolation and the uncertainty of assistance seem to be common themes. Among cold-environment explorers, the presence seems to be virtually always benign, either neutral or positively comforting. For example, in a dinghy adrift in the Pacific, the presence helped to fight a storm; in the Antarctic, a presence posed no danger but followed the subject through tunnels of ice.

They dispute whether *stress* is a cause of the sensed presence experience. Although they do not define 'stress', it appears to me that they use the word to mean

a medically detectable condition. They do state that provoking factors seem to be 'monotony, isolation, and ambient cold' along with contributory factors such as sleeplessness, exhaustion, uncertainty and fear. I should think that a human being in such conditions is definitely under *stress,* at any rate in an informal sense of the word.

In their view (1987: 49), the benign presences are not a pathological symptom but an adaptive response to uncertain environments. They are part of an unconscious coping strategy which enables the subject to survive. Stress, even in a wide sense of the word, is insufficient on its own to provoke the experience in everyone, since it is clear that many people engaged in polar exploration and other hazardous activities do not experience the sensed presence. It is suggested that expectation plays a part: some of those who have experienced presences were already of a religious temperament. A parallel is drawn between the experiences of westerners in adverse environments and the arduous spirit quest engaged in by young men of some North American native tribes, in which the subject expects to encounter a spirit being, which manifests as a 'presence'.

As to the mechanism, Suedfeld and Mocellin (1987: 45-48) review various possibilities. Physiological changes involved may include low levels of oxygen reaching the brain; change in the activity of the reticular activating system in the brainstem because of monotonous stimulation; deactivation of the dominant hemisphere; an accumulation of hormones and chemicals which affect neurotransmission. Citing unpublished work by Green et al., they note that 'twilight states' – characterized by waking theta wave activity – have been claimed to give rise to the appearance of 'Jungian archetypes' such as a wise old man.

Hypervigilance, enhanced alertness to environmental cues and intolerance of ambiguity, as discussed by Houran and Lange (1996), may also occur in states of deprivation and sleeplessness. It may sound contrary to associate lack of sleep and increased vigilance, but I invite the reader to think of an occasion when he or she has been working late at night and is tired: sometimes then one begins to notice minor phenomena, sounds and things seen out of the corner of one's eye, which would normally be disregarded.

In the study cited above, participants in the experiment in the South Bridge Vaults in Edinburgh reported apparitions (of exactly what is not stated), an uneasy sense of being watched, burning sensations and odd odours. In these we recognize familiar aural symptoms, as well as the sense of presence. Among the environmental measurements, light levels were recorded. The strongest correlations shown in the study were that incidence of unusual experiences varied with light level in the passage exterior to the vault where the participant was, and secondly the height of the vault. It is hypothesized that moving from a relatively bright environment to being in a relatively dark environment, when one can see a brighter environment immediately outside, creates a mild form of sensory deprivation. Being below a high ceiling in an unknown place may create a feeling of vulnerability, as indeed would being in relative darkness. In either case the result is to induce anxiety. Hypervigilance, noticing shadows and changes in temperature, may contribute to the anxious state (R. Wiseman, *pers. comm.*). The results are consistent with the hypothesis that stress or ongoing anxiety may in some individuals stimulate temporal-lobe structures sufficiently to induce microseizural activity.

Discussion

All the presences described by Suedfeld and Mocellin are benign, and their hypothesis of the experience as a coping strategy makes sense of the data cited. On the other hand, it must be clear that presences can be anything but benign. Yet it seems clear that the sense of presence is the same type of phenomenon in both cases. On the basis of the literature reviewed, it seems to me that with benign presences a strong *feeling* of a presence is much more common than an actual vision, whereas with malign presences *visions* form a higher proportion of encounters than with benign ones. Even so, it is principally the affect that differs. The emotion accompanying presence experiences is frequently extreme, whether comfort or terror.

In discussion with religious people, I have myself heard personal narratives about a comforting presence and noted a complacent acceptance of the reality of such experiences occurring to others in adversity. These benign presences are regarded as having objective existence and are often attributed to angels or indeed the deity. It is

nice to think that an angel may be looking after one, but people are not so keen to accept the objective reality of terrifying presences.

Archetypes are hard to find among presences and, when they do occur, are usually abstract and without emotional association (Evans 1984: 306). As for the alleged archetypal wise old man, I have not found any instance which conforms to this prototype. Rather than Obiwan Kenobi as portrayed by Alec Guinness[1], the nearest instance (perhaps Chapter 3, Case 1) more closely resembles an unsavoury alter-ego of Yoda.

Sleep

While experiences of the sensed presence, benign or malign, can occur while waking, it would appear that the most frightening variety, the Old Hag, occurs mostly during sleep. One would expect that perceived stress levels should be low during sleep. During sleep, brain scans show lowered activity in limbic areas (Carter 1998: 194). Even so, the evidence reviewed in Chapter 3 makes clear the intensity of nightmares and Old Hags that assault the subject when he or she should be most relaxed. I think that it is possible to come up with an aetiology.

The Old Hag and incubus may probably be explained by sleep paralysis combined with hypnagogic hallucination (Hufford; see Chapter 3). This is an anomalous occurrence of the two conditions proper to REM sleep, muscular atonia and dreaming, in what is normally non-REM sleep stage 1. The Old Hag typically occurs also at times when the subject takes a nap or is overtired. Both the occurrence and the content of the anomalous 'dreaming' is perhaps the result of an inter-hemispheric intercalation which becomes possible owing to relatively lowered metabolism in the left hemisphere as opposed to the right. The 'self', a predominantly left-hemisphere phenomenon, is stressed and vulnerable. One would predict that EEG of limbic areas during this anomalous stage 1 sleep with paralysis and hallucination should not show lowered activity but rather the reverse, while intercalation takes place. Intracranial EEG might be expected to show quasi-epileptic spikes in limbic areas. The tingling reported during some Old Hag experiences may well be an epileptic symptom (Chapter 4). As in normal REM, one would predict that surface EEG should show the beta rhythm associated with dreaming.

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[1] *Star Wars,* Twentieth Century Fox 1977.

Moreover, while asleep, we are in the same location and position for a lengthy period. If there is a varying magnetic field in or around the dwelling, then this is precisely the time when we are most vulnerable to its influence (Budden 1994: 4).

Conclusions

All the environmental factors discussed in this section as possible causes of numinous, particularly sensed-presence, experience are compatible with the general hypothesis that the neural substrate is unusual brain activity with a temporal-lobe focus.

The similarity between experiences in non-clinical settings and those produced by experimental stimulation indicates that the neural substrates underlying both are essentially the same. This neural activity associated with paranormal or numinous experience is quasi-epileptic, in the sense that the EEG in experimental contexts resembles that of epileptic discharges and the subjective experience resembles that of epileptic auras.

I do not wish to make a simplistic connection between *any* kind of epileptic condition and numinous or inexplicable frightening experiences, because such a connection is obviously unsustainable. However, this is an area for research. For example, it would be interesting to examine subjects who report night terrors, and find out whether, when they are in deep sleep, normal temporal-lobe delta rhythms take on spikes or other epileptiform characteristics. Studies have shown the incidence of night terrors to be higher among epileptic subjects than among controls (Stores 2001: 98; *cf.* Shorvon 1994: 44, 47-52).

In the population at large, the experience of sensed presence, together with other paranormal feelings such as déjà vu, depersonalization and the like, can occur in various contexts. I hypothesize that electrical and magnetic fields, some originating from tectonic forces in active faults, some originating from man-made structures such as electricity pylons and transmitters, may directly stimulate temporo-limbic structures of the human brain and provoke quasi-epileptic microseizures which manifest subjectively as numinous feelings. I also hypothesize that stressful situations of isolation, sensory deprivation, expectation of threat, inability to tolerate

ambiguity and heightened alertness to environmental cues may cause physiological changes such as altered levels of neurotransmitters, such as to facilitate the same types of quasi-epileptic microseizures.

Not all people respond in the same way to the same situations. Some people are more susceptible than others to temporal-lobe disturbances, whether provoked directly by environmental electromagnetic phenomena or by various forms of stress. This is so because across the general population there is a continuum of degrees of lability in temporo-limbic structures, ranging from clinical epileptic patients through those who have occasional subclinical epileptiform activity to those whose temporo-limbic structures are in effect entirely stable.

In particular, the sensed presence is explicable as the subjective awareness by the left hemisphere of a right-hemisphere homologue of the sense of self, according to the theory proposed and elaborated by Persinger following Jaynes. This inter-hemispheric communication is facilitated when right-hemisphere temporo-limbic activity exceeds that of the left. When somatosensory (homunculus) data originating in the parietal lobe of the non-dominant hemisphere is communicated as part of this intrusion, visual hallucinations of humanoid figures may result.

The precise sensation of numinousness needs a little further analysis. It seems to be a discrete affective sensation. It has the character of fear or thrill, perhaps even when a benign presence is sensed, in which case it may be called 'godly fear'. We know that fear is associated, principally of all brain structures, with the amygdala. I hypothesize that the numinous fear is the subjective correlate of a particular type of intense and aberrant activity in particular nuclei of the amygdala. This activity may be stimulated directly and experienced spontaneously and at the very beginning of an epileptic aura or numinous experience. At other times, it may follow from the spread, spillover or intensification of other, originally non-numinous, amygdalar activity. Subjectively, the latter case would correlate with numinous fear following intense or prolonged anxiety during the onset of an epileptic aura or in the face of some threatening situation.

The above ideas are of course speculative. The foundation comes from Persinger, Jaynes and others; some ideas are my own. At the present time I do not think that the hypotheses have been refuted. They are, however, in principle testable.

What is needed is brain scanning technology which can show neural activity in finer detail than fMRI is at present able to do. It would be necessary to localize neural activity to the level of particular nuclei within brain structures such as the amygdala and determine patterns and degrees of intensity of neural activation corresponding to experience as it applies to each subject. With Saver and Rabin (1997: 508), I believe the science of correlating experience, particularly religious experience, with neural activity is in its infancy. Apart from the electroencephalograph, the scanning technology available at the time of writing this chapter was not around thirty years ago. The required technology will come, and within twenty to thirty years I believe these matters will be much better understood than they are now.

Mystical experience

Appendix 5C discusses the theory of d'Aquili and Newberg regarding the neural correlates of mystical experience incorporating religious awe, the opposite extreme of Otto's numinous sense from the fear with which I have principally been concerned in this chapter. I have diverted mystical experience to an appendix not only to shorten this chapter but also because it does not figure strongly in the discussion of specific religious elements to follow in Chapters 7-11.

I accept that mysticism is perhaps the highest and most significant manifestation of religion and of dealings with the supernatural. However, its origins in prehistory, if it has prehistoric origins, are probably harder to trace than the origins of other religious elements which, as I shall argue, certainly do have their origins in prehistory. Accordingly, in the rest of this work I do not intend to deal any further with mystical states, but only with supernatural elements of a lower order.

CHAPTER 6

THE SIMIAN SUBSTRATE

Human beings have religion; apes do not. At some period after our ancestors, the earliest hominins, split from the stock of chimpanzees and gorillas, and before the earliest archaeological evidence of religion was deposited, is the time when religion began.

The purpose of this chapter is to clarify what sort of mentality might have existed among the earliest hominins, and what scope there was among them for the development of a religious consciousness or religious or quasi-religious behaviour. Archaeology has recovered some remains of their bodies, but evidence of their way of life is minimal. There is no means of observing their behaviour. However, it is possible to observe the behaviour of present-day apes. I shall try to determine what basis there was for the development of a religious component to life among our remote ancestors, given what is known about the earliest hominins, and given the capabilities, society and mentality of those creatures which appear to be our nearest living relatives, the chimpanzees.

The earliest archaeological records of religion, according to various authorities, may be the written records of ancient Mesopotamia or Egypt, or the parietal art and 'Venus' figurines of the European Upper Palaeolithic, or the human burials of the Middle Palaeolithic in the Near East and Europe. The Upper Palaeolithic art and the earlier burials have been interpreted as evidence of religion, but even they were the work of human beings very recent in the timescale of hominin evolution. In this chapter I am concerned with pre-human, apelike and ape mentalities. A contentious matter may be the identity of humans' nearest living relatives: some authorities have maintained that gorillas, or even orang-utans, rather than chimpanzees, are closer to us. I proceed on the basis that chimpanzees are closer to us, and give reasons.

I do not expect to find religious leanings among present-day apes, nor do I propose that our ancestors, shortly after the split from apes, immediately began to have religious leanings. I do not even suggest, although evidence may be raised by archaeology, that anything which most authorities would interpret as an actual

religion or religious complex appeared at any time in prehistory before the last hundred thousand years.

The earliest hominins must have been indistinguishable from apes in terms of their appearance and behaviour, and probably remained so for some hundreds of millennia, if not millions of years, after the split. It is reasonable to suppose that the earliest undisputed hominins, the australopithecines, were not much less acute in their general mentality than modern African apes, although their behaviours may well have been to some degree less developed. I suggest the last point because, on a *prima facie* basis, it seems likely that modern apes are more sophisticated than their ancestors, just as we are than ours.

As far as body size and habitat are concerned, the nearest analogy among living apes to the australopithecines are the common chimpanzee *(Pan troglodytes),* and the bonobo or pygmy chimpanzee *(Pan paniscus).* I seek to show that in chimpanzee behaviour today there are signs of a mentality and way of living from which certain religious elements could develop.

Now I do not say that chimpanzees in the wild or in zoos are on the point of developing religion, or even that they would do so in the course of the next million years, whether they were left on their own or encouraged and educated by human beings. It is conceivable that in the course of several million years, if chimpanzees survived in the wild and were left to themselves, then religious behaviour, in the form of certain religious *elements* (as I have defined those in Chapter 1), might be precipitated by changes in habitat, subsistence, group size and means of communication. I say this because I believe that, for the ancestors of human beings, religion was a natural development. So if another species from similar beginnings, such as chimpanzees, had the opportunity of similar evolutionary changes, similar cultural and religious developments would occur within that species or its descendant species.

In the natural societies of chimpanzees and with the mental abilities which they possess, I propose that certain conditions are present which are *necessary* conditions for the development of some of the basic elements of religious behaviour, as those were outlined in my introduction. Those conditions are present among apes whereas they are not present, for example, in the behaviour of dogs, bears, cats, tree

shrews or virtually any other genus. Equally, of course, those conditions are not themselves *sufficient* to bring about religious behaviour, otherwise we would see exactly that now among chimpanzees.

I acknowledge that the use of chimpanzees as a model for our earliest ancestors is not wholly legitimate: one is taking a known condition (the life of chimpanzees) and trying to claim that our past was like their present (Binford 1989: 286). Chimpanzees today represent the outcome of five million or more years of evolution on their lineage, just as we are on ours. They may have changed substantially since the time of the common ancestor. With respect to way of life, such behaviours as hunting, tool use and tool making, living in multi-male communities without harems, fighting between communities, and many others in which they resemble us, may all have developed since the split. In other words, the common ancestor may not have possessed those behaviours. However, the fact that those behaviours are shared by us with living chimpanzees indicates that, even if they were not shared with the common ancestor, they could have developed in our lineage at an early stage when our ancestors were anatomically more apelike than we are now: that is, at the stage of australopithecines.

Clearly, we have changed much more than chimpanzees, anatomically over millions of years but especially in behavioural characteristics within the last fifty thousand years. All the evidence indicates that chimpanzees are more like the common ancestor than living humans are. As we have no closer or better living model, I think it is legitimate to draw inferences from chimpanzee behaviour to shed light on what our ancestors may have been like.

Earliest hominins

A detailed presentation of information about the divergence of the human lineage from the apes and about the australopithecines and earliest *Homo,* including references, is given as Appendix 6A.

Chimpanzees

A discussion of chimpanzee mentality is given as Appendix 6B, with references.

Pre-religious behaviour

By *pre-religious behaviour* I mean behaviour which shows resemblances to human behaviour in certain situations of stress which in humans historically have evoked a religious response. Generally, this excludes stress arising from inter-personal or inter-community contention, but includes stress induced by having to face sickness, death and the unknown.

Pre-religious behaviour in higher primates

Compassion

Family loyalty is general among chimpanzees. As paternity is not identifiable among them, the family is limited to mothers and their offspring. In dominance struggles, brothers help each other (Goodall 1986: 178). In other cases of aggression, mothers usually defend their offspring, and offspring defend their mothers.

Chimpanzees frequently, but not invariably, show concern for sick or distressed relatives. An adult female received severe injuries during the conflict between the Kasakela and Kahama communities at Gombe. Her younger daughter remained with her for five days, grooming her and keeping flies away until she died. However, the older daughter was with the attackers, because she had joined their community, and returned with them to their territory after the attack, ignoring her mother. Siblings often care for the youngest infant when the mother dies. For instance, on the death of their mother, a juvenile male took charge of his fourteen-month-old sister, and carried her about everywhere. A sister looked after her younger brother. A sister and brother looked after a youngest brother. When an older brother suffered an injured foot and could only move around slowly, his younger brother became solicitous towards him, and on one occasion whimpered to their mother to make her wait for the older brother when she was moving off. When an old male lost the use of his legs owing to polio, another male who may have been a brother spent several hours each day with him for the last two weeks of his life, and also attacked a much larger dominant male in his defence (Goodall 1971: 202-203; 1986: 72, 383-385).

It is rare for chimpanzees to show care for unrelated community members in the wild. However, captive chimpanzees seem to be more solicitous of those

unrelated. At an island colony surrounded by water in Oklahoma, chimpanzees attempted to rescue others who fell into the moat. In captive colonies, chimpanzees have been witnessed removing splinters from another's skin. One chimpanzee extracted a loose deciduous tooth from another's mouth, and one removed grit from another's eye, a delicate enough operation for humans. To be able to act compassionately, the subject must have an understanding of the wants of the sufferer (Goodall 1986: 378, 385-386). Without having access to details, one suspects that chimpanzees were introduced individually into the Oklahoma and other captive colonies cited, and had no family ties: in such a case, it may be that the community as a whole effectively becomes a family to the individual.

Depression following death of a close relative

Human beings have developed sophisticated ways of deciding on what counts as death. In a hospital, where it is feasible to resuscitate a patient whose heart has stopped for some minutes, what counts is cessation of heartbeat along with brain death, when an electroencephalograph shows no activity. In other circumstances, cessation of pulse or heartbeat is enough. Chimpanzees do not check each other's pulse, of course, but seem to recognize prolonged inactivity or unresponsiveness as a new condition, on observing which they begin to treat one of their fellows differently.

The strongest bond between chimpanzees is between a mother and offspring. Sometimes chimpanzees become agitated when they lose sight of their mother, even in the course of a day's foraging. Females with infants of their own have been known to search for hours, whimpering, when they discover that their mothers have moved away (Goodall 1986: 203).

De Waal (1982: 67-70) describes a female chimpanzee, curiously known as Gorilla, who had a succession of babies die, possibly because she produced too little milk, although she handled them maternally and had plenty of practice as an 'aunt' in looking after other females' babies and infants. After each death, she went into a state which in humans would unhesitatingly be called depression. She ignored the activity around her and sat huddled in a corner for weeks on end, sometimes letting out shrieks for no immediate reason. Interestingly, keepers showed this female how to bottle-feed the orphaned baby of another, and she readily adopted him.

During a poliomyelitis epidemic at Gombe, a one-month-old infant contracted the disease and lost the use of both arms and legs. The mother carried the baby around, cradled in her arms. If he screamed, she arranged his limbs to avoid crushing them. However, when he ceased to move or vocalize, either from death at that point or loss of consciousness with death soon afterwards, she immediately ceased to show maternal concern. For three days she continued to carry the body around, throwing it onto her back and dangling it by one leg. Young female chimpanzees came to stare, but did not touch. On the third day, an older daughter tried to play with what was by then definitely the corpse of her sibling, but when she picked it up, the mother snatched it back. Throughout this time the mother looked dazed, staring into space. Eventually the body was abandoned in the forest (Goodall 1971: 195-196; 1986: 383). The mother's behaviour indicates recognition of change of state in the baby. She had been responsive to its signs of life, and when the latter ceased, she ceased to respond with care. This reaction would indicate that giving care is an instinctive stimulus-response process. It is not clear what motivated the mother to continue to carry the corpse around. However, her bewilderment after the death is of interest in the present study. If she were human, we would probably say she was 'in shock'.

Goodall (1986: 66, 74, 101, 203-204) describes a number of cases of infants' and juveniles' distress following the death of a mother. When an infant has not yet been weaned, of course it is likely to die even if adopted by an older sibling or an 'aunt'. Goodall uses the phrase 'clinical depression' to describe the condition seen in several infants. In laboratory experiments on rhesus monkeys, body temperature, heart rate and rhythm were all affected when infants were separated from mothers; outward expressions were a 'sad' face, lethargy and withdrawal.

One infant chimpanzee lived for eighteen months after the death of his mother. Despite being looked after by his older sister, he remained listless, huddled, and performed repetitive behaviours, pulling out hairs and rocking back and forth. The youngest child of an old mother was eight and a half years old when she died. He had a very close attachment to her, was weaned late, and used to ride on her back well past the age when other juveniles would have been forced to be more independent. When she died, he remained by the body for many hours. Healthy at the

beginning, he lived only a further three and a half weeks, deteriorating physically and becoming lethargic. An autopsy showed gastroenteritis and peritonitis, but it seems that depression lowered his resistance to infection. One female infant disappeared in the forest eight months after the mother's death, and probably died. Others, adopted by relatives, showed signs of depression, but after some months recovered. Two of those who recovered were subsequently retarded in physical development, reaching puberty several years later than normal. In humans, social workers would call these symptoms 'failure to thrive'. Given that those infants were more or less weaned, it seems idle to suggest that the cause of their depressive symptoms was other than psychological trauma.

Fearful response to sickness and death of others

Whereas above I mentioned instances of care for others, chimpanzees do not habitually treat the sick solicitously. Sometimes others will sniff at parts of the body of a sick member of the community. During the poliomyelitis epidemic at Gombe, when three chimpanzees lost the full use of their limbs and could not move normally, others showed grins of fear, rushing to embrace and pat each other, apparently comforting each other while continuing to stare at the cripples. When an old male suffered paralysis of the legs and was unable to move around, other males would not take part in grooming when he approached, but moved away. Two adult males displayed at and attacked this old community member. When a female suffered a cut on her head, the others showed fear and shunned her. One chimpanzee in a captive colony was returned to the community after medical treatment still not fully conscious after the anaesthetic. He was attacked by others and would have been killed if humans had not intervened (Goodall 1971: 201; 1986: 139, 330-331, 385).

After a fight, chimpanzees may intently sniff and even lick blood spilled onto vegetation. Leaves may be used to wipe wounds. Other chimpanzees have been seen to pick up such bloodstained leaves and smell them. Chimpanzees sniff carefully at dead bodies of their conspecifics, and at places where a dead body has lain. They sometimes go back to a place where they attacked a stranger, as if to check that the stranger is dead (Goodall 1986: 139, 529-530).

When an adult male fell out of a tree and broke his neck, dying instantly, the others showed intense excitement, performing aggressive displays round the dead

body and throwing stones at it. The excitement led to aggression among the living, directed against each other. In the course of fighting between communities, an adult female was fatally injured. An adult male of the other community displayed round her and waved branches until she moved again, as if he could not be sure the attack had been successful (Goodall 1986: 330, 530).

Chimpanzees seem to have a hatred of strangers from other communities. Goodall (1986: 331, 532) proposes that they treat strangers as if they are prey rather than members of the same species. She draws attention to a similar process among human beings, when we treat other nationalities and races as subhuman. Many human groups call themselves 'the people', distinguishing themselves from all others, who do not count. However, I suggest that the victims of chimpanzee inter-community violence are not treated as prey, strictly speaking, as it appears that, although strangers of all ages are attacked, only babies are actually eaten.

On the above evidence, one might add to a hatred of strangers a hatred of *strangeness.* The movements of crippled individuals, the immobility of the dying, the unresponsiveness of a dead body are all strange because they show a change of state from the accustomed behaviour of the subjects. The strangeness evokes fear, which in turn produces a need to deal with the fear by attacking its object. Goodall (1986: 533) suggests that the bizarre behaviour of males round a corpse could develop into ritual. It could be that, after a fight, displays are merely intended to provoke the unresponsive victim into movement, to find out whether it is still alive, so that, if it is, the attacker can finish it off. However, in the case of the male who fell from a tree, there was no initial attack on this individual. The aggression directed at his body seems to be provoked only by strangeness.

There is no fear of blood, but there is a degree of interest in it, as witnessed by the sniffing and licking. One is tempted to see here the beginning of the fascination with blood in human culture.

Alertness and challenge in face of natural phenomena

When on patrol, chimpanzees may be startled by a snapping twig or a rustle in the bushes, and then they generally show fearful behaviour. On return to the home range, they display, throwing rocks and branches, and may attack a subdominant

member of the community, as if redirecting suppressed aggression (Goodall 1986: 331). In this case, the chimpanzees are expecting to encounter males of a hostile neighbouring community. Any sound may be evidence that a hostile patrol is nearby, and therefore causes a heightened state of alert.

Three females were feeding in a fig tree. Lightning struck near the top of the tree, with virtually simultaneous thunder. The two young females took no notice and continued to feed, but the old female stared at the human observer. It is suggested that the old female may have had a recollection of humans with firearms (Ghiglieri 1984: 119). Here the thunder and lightning as phenomena in their own right caused no reaction.

During heavy rain chimpanzees become less active and sit huddled. However, at the onset of heavy rain there may be wild displays by adult males, which sometimes leads to aggression between members of the group. Goodall refers to this behaviour as the 'rain dance'. The first she witnessed at Gombe began when the rain was already falling and a thunderclap sounded overhead. A group of chimpanzees had climbed up a slope to an open ridge. First one adult male stood upright, making pant-hoot sounds and swaying, then charged down the slope. Another five in succession followed, breaking branches and dragging them down the slope. As they arrived at the bottom, they climbed into trees, but then left the trees in the same succession to return to the top of the ridge. They repeated the downward charge twice. Meanwhile, females and juveniles watched the performance. The 'rain dance' was observed three times in one year. Usually it is an individual performance, whereas this first case involved the whole group of adult males. In a similar way, chimpanzees may display at a noisy waterfall or stream.[1] Goodall likens the performance to challenging the elements, as she envisages primitive humans may have done (Goodall 1971: 58-59; 1986: 67, 335).

Melancholy

As I have no relevant information about chimpanzees on this subject, here I turn from chimpanzees to baboons.

[1] *Primates,* BBC Television 1999.

Among human beings there is a tendency to melancholy at the approach of evening, a tendency of which I can speak from personal experience. Eugène Marais (1969: 133-139), writing in the early part of the twentieth century, observed a general quiescence of activity among tribal people at this time of day, when children creep closer to parents and conversation drops. When night finally comes, activity and happy chatter resume, so it is not a fear of darkness that promotes the sense of sadness at twilight. Marais found that both Europeans and native Africans discussed this phenomenon without dispute as a familiar experience in their own lives, although it can be expected to be muted among city-dwellers and when artificial light is available on demand. However, Marais observed the same quiescence at evening among baboons on the high veld of South Africa, when adults would sit silent on rocky outcrops and the juveniles would cease to play. Again, activity would resume after sunset, and would continue for hours on moonlit nights. Marais has no doubt that the experience of baboons and humans is the same, and calls this phenomenon 'hesperian depression'.

Marais (1969: 124-133) also draws attention to the propensity of the baboon in captivity to become addicted to tobacco and alcohol. In the wild, he describes cases where baboon troops ate parts of toxic plants. The roots of an aquatic plant, used by human inhabitants as a purgative, were often chewed and sucked by baboons. The ripe fruits of a particular mountain shrub, which caused convulsions and sometimes death in humans, were also consumed in considerable quantity by baboons. He recounts that local people observed baboons eating these fruits even when there was plenty of more nutritious material available, and subsequently showing symptoms of drunkenness, staggering and becoming reckless of their own safety as they climbed.

Marais proposes that the baboons desire to become intoxicated, and attributes this desire in them and in humans to what he calls 'the pain of consciousness' (Marais 1969: 117). He believed that apes and monkeys have a level of awareness which is intermediate between ours and that of the lower animals, and that this awareness (I hesitate to say 'self-awareness') is at times so oppressive that they, like ourselves, wish to put a stop to it, at least temporarily. One suspects that the circumstances of his own life, which was brought to a premature end by an overdose

of morphine, coloured his attitude to awareness, but that he was right in attributing to higher primates a capacity for bewilderment, sadness and depression.

Precursors of religious elements among the australopithecines

Australopithecine behaviour

On the basis of the evidence detailed above, here are some speculations about salient characteristics of the early hominins, which are represented in the fossil record by the creatures which we may broadly call the australopithecines, from *Orrorin* or *Ardipithecus* onward.

They were approximately the size of a chimpanzee. They walked upright and travelled considerable distances on the ground but were almost equally at home in the trees, to which they probably retreated for safety when large carnivores approached. They may have used sticks and stones as tools, but did not yet make stone tools, as chipped stone tools are not known until more than two million years after the lineages of hominins and chimpanzees split up. In fact, it seems likely that tool use has been invented separately by hominins and chimpanzees. They probably lived in communities. Early hominins show considerable sexual dimorphism: males were bigger and stronger than females. It may be that adult males defended the community from predators and from males of other communities or tribes. They could not speak.

Early hominins probably formed affectionate bonds between mothers and offspring and between siblings, which may have lasted for life. They groomed, embraced and kissed, and were excited on meeting again after an absence. In their multi-male, multi-female communities, sexual activity was not restricted to alpha males. It may be that chimpanzees have separately developed the consortship, in which a male and female travel together apart from the rest (Goodall 1986: 453-465, 481-482), but some similar practices may have come into being at times among hominins. They may have helped each other in adversity, but there was probably a great deal of intra-community violence, mostly perpetrated by adult males. They ate fruits and other vegetation, probably digging up roots and grubs with sticks. They hunted animals smaller than themselves, probably setting out deliberately in cooperative bands, signalling to one another by gesture. They shared food with

varying degrees of willingness. They threw sticks and stones to ward off snakes and other predators.

They expected others to reciprocate help and support. In the family and in hunting bands they counted on each other's help against outsiders. Yet in relations between individuals they guessed each other's intentions and deceived each other for personal advantage in feeding and mating.

When a family member was sick, others in the family were solicitous. When a mother died, the offspring, especially those still infants or juveniles, became depressed; some pined away and died. When a child died, the mother became depressed and bewildered.

Those not in the family were curious and yet repelled by the sick and dying. They shunned the sick, disturbed by the strangeness of a community member who did not behave normally, and sometimes they reacted with threats and violence if the sick member approached. When a community member died, others were frightened by the strange inanimacy of the corpse. They came near to the body, and sometimes carried out threat displays, kicking it, prodding it with a stick, jumping round it, always afraid that it might suddenly come back to life, leap up and attack them.

In the forest, noises which might be caused by predators or an approaching band from a hostile community frightened them. They were in a state of alert when near the borders of their range and approaching unfamiliar territory, where strangers might suddenly appear. Noisy natural phenomena such as thunder, waterfalls and heavy rain frightened them and they reacted by performing threat displays. In these cases, as there was no tangible or manageable object, the displays were longer on wild, expansive gestures and shorter on practical blows than if directed at another hominin or animal.

On open ridges and in forest clearings, noticing the dimming of the sky, they became subdued and experienced another moment of that uneasy bewilderment which touched them on the death of one of their fellows. When they felt sick, they ate plant material which purged the system or counteracted the infection or infestation. The toxins in some plants produced a temporary bewilderment of a more liberating nature.

In the behaviour of our remote ancestors, if it resembled my sketch above, we see what I believe, with Goodall (1986: 386), to be the precursors of love, compassion, charity and community spirit. These are all components of human life and especially of the religious life in some of its manifestations. However, I intend to concentrate on those behaviours which bear directly upon the supernatural.

In the behaviour of our ancestors, and indeed in chimpanzees, we do not see elements of religion, but I think we do see the *precursors* of certain religious elements.

One precursor is the display behaviour round a corpse and in face of natural phenomena. Normally, aggressive displays are directed at conspecifics or against predators, so as to provoke a submission or flight reaction from the other. In the case of corpses and natural phenomena, the display behaviour is directed at an object which does not recognize or react to it. The displays may continue at some length, perhaps because, in the absence of a reaction or response, it is difficult to know when to stop. As far as threatening the inert object is concerned, from our vantage we can tell that the behaviour is futile. As far as the unknowing subject is concerned, it may not be futile. And the display behaviour may be helpful to the subject by defusing the tension and fear created by the predicament. In these objectively futile activities, I suggest, we see a precursor of apotropaic ritual.

Religious ritual is tied to a belief in an agent towards whom the ritual actions may be directed. However, some rituals and ceremonies in human society are carried out principally, solely or even explicitly for the benefit of or to fulfil the expectations of the participants and observers. Such an objective renders these rituals and ceremonies primarily or entirely social rather than religious phenomena. The singing of national anthems at the beginning of an international football match and the swearing in of the President of the United States are social, not religious, ceremonies.

In the chimpanzee cases considered above, the display or pre-ritual behaviour is not carried out either for fun or with intent to fulfil the expectations of other chimpanzees, but is clearly directed at objects other than the chimpanzees participating or observing. Those objects, while physical and visible in the cases considered, may be replaced in genuinely religious ritual by putative supernatural

agents: beings which are thought to receive or recognize and respond to ritual actions directed towards them. In later chapters I deal with the origins of two kinds of such supernatural beings, but I do not attempt any further discussion of ritual itself in this work.

I intend from now on to concentrate on three elements of religion concerned with *belief in the supernatural.* In the behaviour of chimpanzees we see at least three precursors of religious elements concerned with supernatural belief. These precursors would have been present in the lives of the australopithecines. One precursor is the interpretation of certain natural phenomena as indications of threat from another personal or animal agency: this is the precursor of the religious element which I call *animatism.* Another precursor is the sense of strangeness associated with death: this contributes to the religious element which I call *animism.* A third precursor is the eating of vegetable material, the intoxication from which may induce a sense of detachment from the everyday world: such intoxication is, I contend, a precursor of the religious element of belief in *another world.*

These three precursors form the bases from which, as I hope to show, three fundamental religious elements could have developed in prehistory. In the next four chapters, I shall try to explicate how those developments would have occurred.

CHAPTER 7

ANIMATISM: NUMINA, DAEMONS

A spirit being, with reference to Tylor (1871, II: 108), is supposed to be a more or less self-aware entity which generally is invisible, may move around or may more or less permanently be associated with, be located in, inhabit or control what we call inanimate objects, as well as places and natural phenomena. Spirit beings are taken to be supernatural agencies which cause events to happen in the physical world: storms, disease, strange noises or shadows. They are not seen as the only cause of such phenomena, but they are sometimes put forward as a possible cause.

By 'spirit beings', a term often used by researchers of the late nineteenth and early twentieth centuries, I do not mean souls, spirits of the dead or soul-like spirits, but, rather, non-human personalities of inanimate objects, places and phenomena: what Otto calls *numina* or *daemons.* These may be, but are not necessarily, *demons* (evil spirits).

While I propose that any given religion is made up of a collection of elements, some of which could be absent without the remnant ceasing to constitute a religion, the belief in spirit beings is certainly a major element. In discussing whether there are any societies without religion, Tylor feels able to sideline elements such as the belief in a supreme deity, judgement after death, the adoration of idols and the practice of sacrifice, but makes the belief in spirit beings the minimum definition of religion. On this basis there are no recorded human societies without religion (Tylor 1871, I: 424).

The subject of animatism, usually called 'animism', has been rediscovered by anthropology in the 1990s, and a major contribution to study of its origin has been made by Guthrie (1993). Other writers mostly treat it as a timeless phenomenon to be analysed. The distinction which I make below between animism (the attribution of souls to humans and creatures in general) and animatism (the attribution of personality to non-human objects and phenomena) is usually not made.

Observing that many non-western cultures commonly attribute human dispositions and behaviours to non-human objects, Descola (1996: 82, 89, 94-95) says that 'animism ... conceptualizes a continuity between humans and non-humans

which it can produce only metaphorically, in the symbolic metamorphoses generated by rituals'. He contrasts animism with totemism. In this context, totemism appears to be a special case of animism in which animals are taken to be human kin (*cf.* Knight and Powers 1998: 129). Pedersen (2001) analyses the applicability of such concepts to North Asian societies. North Asian 'animism' is not so much concerned with non-human souls as with the 'perception of a potential interior spiritual quality in things'. Thus he distinguishes what I call *animism* from *animatism*. 'Animism' and 'totemism' identify different ontological principles through which the peoples of North North Asia (animists) and South North Asia (totemists) organize their societies of humans and non-humans (Pedersen 2001: 413-414).

In a highly interpretative article, Viveiros de Castro (1998) expounds *perspectivism*. According to his analysis of native Amazonian cultures, animals and some other creatures are treated as having a point of view, as being subjects, not mere objects of *our* perception. They possess 'the capacities of conscious intentionality and agency' characteristic of humans. These capacities are 'objectified as soul or spirit'. As subjects, animals have their own perspective. From their perspective, they are people. Thus, 'animism is not a projection of substantive human qualities cast onto animals, but rather expresses the logical equivalent of the reflexive relations that humans and animals each have to themselves: salmon are to (see) salmon as humans are to (see) humans, namely (as) humans.' For instance, what to us is blood is maize beer to the jaguar; to a tapir a waterhole is a ceremonial house (Viveiros de Castro 1998: 469, 476-478).

While recent work such as the above elucidates some aspects of animism and animatism, for a theory of origins I make use of Marett (1914) and Guthrie (1993). Following Marett, I argue that the origin of the belief in spirit beings – that is, numina – is distinct from, earlier than and not dependent upon the belief in souls. I also argue, following Guthrie, that belief in spirit beings is the result of a natural tendency of humans and the lower animals to approach the world as if objects in it are intentional agents, and that in evolutionary terms this approach is selectively advantageous. The human tendency to anthropomorphism has long been recognized. What is new in Guthrie's treatment, I believe, is (1) the connection of treating

inanimate objects as if they have personalities to the anthropomorphic tendency; and (2) the explanation of this tendency in terms of selective advantage in prehistory.

I further argue that the peculiar fear of the uncanny associated with numina or spirit beings can be accounted for by specific neural processes induced in the subject by a mistaken perception of a personal agent in the inanimate environment.

Belief in spirit beings is neither the whole of religion nor the basis from which all the rest of religion springs, but I think it is a fundamental category, from which *some* other religious categories do spring. Belief in spirit beings is also, I should think, not a necessary category: that is, one without which any collection of remaining categories would not constitute a religion. However, whether it is a necessary category is, I think, not material to discussion of its origin. It is only with origins that I am concerned here.

Souls versus numina

To begin with Tylor, consider his account of how the idea arose that animals and what we call inanimate objects possessed spirits similar to the souls of human beings (1871, II: 109-111). Early humans interpreted the world according to their understanding of themselves, and according to that understanding they possessed souls, a conclusion they had already arrived at by the thinking to be described in Chapter 8. The 'rude men of old days', savage philosophers, exercised their reason and their imagination to people their vicinity and the world at large with phantoms or spirits. What motivated them to this conclusion was the reasonable inference that effects are due to causes; the spirit beings are personified causes of events in the world at large, events not attributable to the action of humans themselves. Just as the actions of everyday life were caused by a person's own soul, so the events of the outside world, whether to the advantage or disadvantage of humans, were held to be caused by external soul-like beings inhabiting objects in the environment. In the chapters following the synopsis of the account, Tylor gives copious examples which show the similarity of nature, presumed appearance and behaviour between the souls of humans and non-human spirits.

It seems likely that early people who had sufficient leisure and interest and were capable of excogitating the notion of a soul would be able to carry out a further

process of speculation to arrive at the conclusion that soul-like spirits exist in the world at large. So far, I think Tylor has given us a credible account of the origin of the concept of soul-like spirits which inhabit non-human creatures and objects and cause events.

We would have to date the idea of soul-like spirits to a time later than that at which the concept of soul itself came into being. It need not have been very much later on the timescale of human evolution, but perhaps several generations or even thousands of years later.

As with soul, objections have been raised to Tylor's theory of the origin of the concept of spirit beings. It seems to me that some of those objections are valid. He himself says that a spirit being is a personified cause of events (1871, II: 108). This would seem to be an idea distinct from, and more primitive than, that of a soul-like spirit. I think Tylor was probably right that the idea of *soul-like spirit* arose as described above, but I suggest that humans, and indeed prehumans, already had a rudimentary notion of a *spirit being,* a *numen,* which dated from ages before.

Supernatural beings, spirit beings and others

It is almost, if not quite, a defining characteristic of a supernatural being of any kind that it is invisible, only intermittently visible, or visible only under special conditions, such as in the contrived environment of a darkened room or in altered states of consciousness. In contrast, ordinary non-supernatural beings are readily seen. If a dog is present and not hidden, then in daylight or artificial light sufficient for us to see our surroundings, we are guaranteed to see the dog. If a spirit being is supposed to be present, then no conditions can be specified under which it is guaranteed that it will be seen. It is always liable to be hidden or to depart when we try to look at it. No doubt there are some parallels here with experiments in physical science, which do not always go according to plan. In contrast to chemical substances, however, we may be told by an expert, such as a medicine man, that a spirit being has *chosen* not to appear to us.

Science knows of no creature extant today with a human or superhuman degree of mentality, with insight, theory of mind, cunning, ambition, interpretative and decision-making skills and ability to communicate comparable to that of

humans. As discussed in Chapter 6, the nearest thing to such a being is the chimpanzee. In contrast, the supernaturalist view populates the world with all manner of non-human beings which can think and be motivated like humans (*cf.* Boyer 2000: 201-202, 207).

Supernatural beings include gods, angels, demons, ghosts, fairies, elves, dwarves, trolls, giants, dragons, and malevolent subhuman animals such as cats in the role of witches' familiars, which appear to have a greater understanding of human affairs than normal animals of their kind. Some of these beings are spiritual or soul-like, such as demons. Others, like dragons, giants and trolls, and perhaps elves, are material like us, but by virtue of their size, physiology or superhuman powers are not *Homo sapiens*. Not only are those material beings not of the same species as ourselves, but, rather interestingly, the physiologies of those various beings are so different one from another that one would have to classify them as belonging to several different genera or even families, let alone species. Yet some are so similar to us in terms of their physiognomy and mode of locomotion, like dwarves and perhaps elves, that they would have to share a more recent ancestry with us than the apes, and form a branch of the subfamily Homininae.

However different in their substantial nature, all these beings, spiritual and material alike, share a mentality. They can choose, plan, deceive, anticipate, serve, love, hate, have a sense of honour and sometimes humour, and are motivated by wishes and ambitions which we can observe and empathize with in ourselves and our fellow humans. They can sometimes be outwitted; for example, an evil spirit can be intercepted coming along a path rather than through the bush (Parrinder 1954: 115). Whatever their physiology and genealogy, all these supernatural beings possess human-like minds, and most of them can communicate using human-like language. In those respects, they are unlike every non-human creature known to biology. Moreover, all these beings are postulated to possess, at least in some circumstances, a power which they can use at will to harm or help us and which is of a magnitude that we ignore at our peril.

Animatism

Marett (1914: 6) states that *animism* is 'a more or less definite creed or body of ideas'. I shall try to make clear in Chapter 8 that, in its infancy, animism, the

belief in souls, must have been a collection of vague ideas regarding the images of absent people, and that those ideas were extended, possibly over many generations, to include souls of other creatures and spirits inhabiting other objects. It would certainly not initially have been a *system* or have been capable of expression or explanation in the form of a creed. Even so, I am persuaded that the belief that there is a separable conscious entity inhabiting bodies is, however dim initially, a product of intellect. Marett was right, I think, to look for the much more 'dim heart-stirrings and fancies' which should have preceded animism, and which he calls *animatism* (1914: 14).

Animatism is the attribution of mere personality to objects, processes or locations, so that one acts as if beings are there which are potentially aware of one's presence and as if one could relate to those beings rather as one person to another. The personality is not initially regarded as a soul or soul-like spirit. If the phenomenon is a delimitable physical object such as a stone, then the personality may be regarded as an intrinsic attribute of the phenomenon itself. If the phenomenon is a location, then the personality may be regarded as an unseen being inhabiting it. If it is a natural process such as a storm, then either view may apply.

Marett's chief ethnographic examples of animatism are as follows. In South Africa, when a thunderstorm approaches, the inhabitants of a village, led by the witch doctor, may rush to the nearest hill and shout to divert the storm. In the Arctic, knives are brandished and dirt thrown at the Aurora Borealis to drive it away. Stones in the form of solitary pillars, a meteorite, a pebble in the shape of an animal are likely to be attributed powers. A tribe in Hawaii differentiated their sacred stones into male and female, and believed that little stones sometimes appeared beside the big ones (Marett 1914: 14, 18).

According to Marett, the more startling manifestations of nature produce in man an awe which he takes to be religious. It is not merely the attribution of personality to non-human phenomena but also the fear of the unknown that creates the specifically religious mood (Marett 1914: 13, 14; cf. Karsten 1935: 27).

The parallel between Marett's tribesmen shouting at the thunderstorm to drive it away and Goodall's chimpanzees excited by the thunderstorm and apparently performing threat behaviour, as related in Chapter 6, will be evident.

Bird-David cites conservation, if not veneration, of stones by the Nayaka in South India in recent years, where stones were brought into the house by women to live with the family. In her account, the stones do not appear to be inhabited by spirits, but the women relate to them. According to her, the reason why the Nayaka maintain social relationships with non-human beings is not because they consider them persons *'a priori' (prima facie?),* as she says Tylor held. Rather, they constitute those other beings as persons 'as and when and because' they engage in those relationships (Bird-David 1999: S73-S74). In other words, the attitude of being in relationship to other beings, or of being ready to take on relationships with other beings, is prior to the decision that other beings are persons.

Bird-David (1999: S78) makes a case that the tendency to attribute personality to inanimate objects (she uses a verb 'animate') is the outcome of humans' socially biased cognitive skills, which were selected for in evolution by the demands of interpersonal dealings with fellow humans (or hominins), including strategic planning and anticipation of action, response and reaction.

All these are cases of treating non-human objects as if they possessed a human personality, a tendency which Tylor himself noted (1871, I: 477).

Animatizing

From everyday life as well as from ethnography, it is clear that human beings are prone to treat non-human objects as if they were human and to treat inanimate objects as if they were animate. Guthrie (1993: 62) calls the former *anthropomorphizing* and the latter *animating.* To refer to both or to either indiscriminately, I shall use the term 'animatizing'. *Animatism* is the religious or supernaturalist view that the world contains non-human objects with human-like personality. I shall argue that animatism arises from the human propensity to animatize.

Darwin notes 'a tendency in savages to imagine that natural objects and agencies are animated by spiritual or living essences'. Evidence of this tendency in lower animals seems to be shown by an incident with his dog. An open parasol, which the dog would have disregarded if anyone had been near it, was occasionally stirred by a breeze; every time the parasol moved, the dog growled and barked.

Darwin suggests that the dog must have 'reasoned to himself in a rapid and unconscious manner that movement without any apparent cause indicated the presence of some strange living agent' (Darwin 1871: 469).

Examples of animatizing

Anthropomorphism

In everyday life, we constantly see human shapes and faces and human influence. I recall once looking out of a window at night and seeing an old woman in a black cloak crouched down behind the house. The edges of the hood of her cloak waved in the wind and she seemed to be shaking her head, as if grieving for someone lost. On closer inspection, she turned out to be a black plastic rubbish sack; the top had been tied and the edges above the tie waved in the wind.

Until we get close, the headrests of car seats look like the heads of people sitting in the car. A taxi driver pulls up to a mail box thinking it is a potential passenger. A jogger sees street furniture in the distance as other people. When we hear a door slam in another part of the house or a branch tapping at a window, we assume at first that it may be a person, perhaps an intruder. An ornithologist in New Guinea assumed that a black figure which he glimpsed behind him from time to time was human, before seeing it clearly, whereupon it turned out to be a bird following him to catch insects (Guthrie 1993: 92-93).

In art and advertising, anthropomorphism is widely used to attract attention. Products are given human faces; the vaguely human shapes of some objects, such as Coca Cola bottles, are exaggerated in depictions.

The reader is referred to Guthrie (1993) for more instances and for references.

Animating

A common-sense but reflective view of the world recognizes that some objects are animate and some are inanimate. For practical everyday purposes, only humans and animals of small insect size and above count as animate, while plants count as inanimate. There are microsocopic animals, of course, but they do not count for practical, everyday purposes. If we are concerned with the origins of religion, then only objects visible to the naked eye, such as prehistoric people and prehumans

could have been aware of, are significant. We, and other animals, often mistake inanimate objects for animate ones. We rarely mistake animate for inanimate objects.

A jogger sees a bear crouching in the distance; on getting closer, he discovers it is a boulder (Guthrie 1993: 45). Out of the corner of my eye I once noticed a grey mouse in a corner of the kitchen floor; on looking straight at it, I saw it was a piece of fluff from the tumble drier.

Some animals have evolved camouflage which allows them to appear inanimate and so evade detection by predators. A coyote coloured like the landscape may disappear when it stands still. Insects may look like twigs, leaves or even water droplets. A bird which detects and eats a twig-mimicking caterpillar then may peck at actual twigs as if they are also insects. Cats, especially kittens, are distracted by leaves and small moving objects which resemble their natural prey. Motion especially is treated by animals as a sign of possible animacy (Guthrie 1993: 48-51).

Again, the reader is directed to Guthrie (1993) for further examples and references.

Reasons for animatizing

Inadequate explanations

From the above, I take it as given that human beings and other animals are prone to animate and anthropomorphize. Some reasons which have been offered to explain the animatizing tendency are discussed.

Piaget attributes the tendency, among children and some primitives, to a lack of differentiation between self and other, so that we see humanity in the world at large. However, later authorities deny that there is confusion between self and other even in infancy, and others state that any continuing undifferentiation in functioning adults is very unlikely (Guthrie 1993: 40, 80).

Another explanation is that wishful thinking induces us to see people where there are none. We are innately attracted to seek social relations with other people. Social contact is a deep human need. As a result, we wishfully populate our surroundings with human-like beings. See also the discussion in Appendix 7A on the objections of Bird-David regarding 'socially biased cognitive skills'. In fact,

however, we anthropomorphize whether or not we seek company. Interpretation of a shadow as someone about to attack us is not an expression of a desire for company. Moreover, many of the quasi-human beings which religion postulates are anything but desirable companions. In fact, the demonic beings postulated by some tribal religions and by developed religions such as Christianity and Islam in the Middle Ages are frightening and can hardly be the product of wishful thinking (Guthrie 1993: 41, 64, 72, 77-78).

The proposed explanation

We and other animals animatize, in the sense of animating, because we need to spot other living creatures in our environment. Other living creatures may be predators or prey. It is important to evade predators and detect prey. Spotting either is not a matter of wishful thinking: To survive, we humans and other animals must be aware of other living creatures around us, whether they attract us or frighten us.

All perception involves interpretation. The environment is not given to us; we unconsciously filter the stream of data coming from our senses to create our own picture of what is relevant. The filtering is inbuilt. It is a matter of pattern recognition. We filter so as to perceive what matters: in particular, we notice movement and signs of other creatures in the vicinity (Guthrie 1993: *passim,* but especially 64, 77, 121).

Generation by generation our senses have been developed by natural selection to serve this function of detecting predators and prey. Creatures which are less able than others to detect predators or prey end up being eaten or starving before they can reproduce. Their genes for inadequate perception are thereby eliminated from the gene pool. Thus all surviving creatures tend to animate constantly.

Our perceptions, our interpretations, are not always accurate. Sometimes we overestimate the degree of organization in the environment and think we detect a creature where there is none. Aware of animal mimicry, we may mistake inanimate objects for animate ones. Movement may be interpreted as a sign of a living creature, when in fact it is caused by a non-living agency. For survival, it is better to err this way, on the side of being too sensitive, than to be insufficiently alert. Animals from

frogs to people employ this strategy. The occasional mistake of overestimating what is present is a cost incurred by any creature which perceives (Guthrie 1993: 47, 61).

What has been said about the need to animate applies *a fortiori* to anthropomorphizing.

When we say that a perception is anthropomorphic, all this means is that we thought someone was there when they were not; we assigned more organization to the environment than was actually present. This does not mean that the perception is irrational. Anthropomorphism is not an irrational approach to the environment; it is a perceptual strategy which promotes the safety of the creature which anthropomorphizes. Sometimes we get it wrong. We do not know that we get it wrong until after the event. Sometimes perhaps we get it wrong and never discover that we got it wrong.

Human beings are the most interesting and attractive creatures we know, and also the most dangerous. It is important to be aware of any human beings in our vicinity. If they are friendly we shall wish to have their company, and if they are hostile we shall need to know what they are up to.

Our predisposition to perceive other human beings is motivated not just by the need for company of other creatures of our own kind, but also by fear. Sometimes we wish to look out for other human beings so as to avoid them, especially if we are weaker and in a compromising position: for instance, stealing food or reconnoitring the territory of another group.

Anthropomorphism is 'an attempt to see not what we want to see or what it is easy to see, but what it is important to see'. Human beings are the most highly complex, most fascinating and most powerful organisms we know. We have more intense and highly dependent relations with others of our own kind than with any other beings. For these reasons we have evolved an acute disposition to perceive, or an acute disposition not to miss, signs of human presence or activity in our environment (Guthrie 1993: *passim,* but especially 64, 74, 82-83).

Our disposition is innate, and shared *mutatis mutandis* with other primates. For all primates, the face is the most significant aspect of the creature; it may show intention, friendliness or hostility. It is the most important part of the animal to

recognize, the most important to separate from the background. Monkeys, even young monkeys which have been raised without meeting other monkeys, distinguish monkey faces from others. Human babies soon recognize human faces (Guthrie 1993: 89, 104). Human beings appear to have specific neural circuits devoted to recognition of people. Those circuits are impaired in prosopagnosia ('face blindness'). One farmer who suffered from this condition after brain injury was unable to recognize people but still able to distinguish every one of his flock of sheep. Such a case indicates that in humans those circuits specifically function for recognition of our own kind (Carter 1998: 119-121). Facial recognition is a function of temporal-lobe structures (Beaton and Aggleton 2000: 499-501; Persinger 1993: 919).

Significance

I believe Guthrie has demonstrated the origin of animatizing, both anthropomorphism and animating, as an unconscious perceptual strategy promoted in all animals by natural selection. However, without always distinguishing the two concepts, he also gives reasons why the animatizing tendency should survive in a creature which begins to reflect on the world around it.

Because human beings are the most complex creatures we know, human agency offers great explanatory power. An organism is more significant than inorganic matter, an animal is more significant than a plant, and a human being is the most significant of all. If we seek meaning in our environment, reasons why things are as they are, then the presence of human beings would supply that meaning. Human beings are capable of many more varied kinds of action and of causing many more types of effect than any other creature we know. Explanatory or interpretative models of our environment based on human or human-like agency therefore account for the widest possible range of phenomena. Human or human-like agency provides our most powerful model for explaining the world around us. The model of human or human-like agency is promoted unconsciously by our disposition to anthropomorphize, but, to one seeking understanding of his or her environment, it is also reasonable, because it has great explanatory power (Guthrie 1993: *passim,* esp. 64, 77-78, 89-90, 102, 121, 189; Boyer 2000: 203, 210).

The remaining problem is the transition from the concept of human agency in the world to the additional concept of *human-like* personal agency. That is what I seek to deal with next.

Human-like personal agencies: numina

I suggest that the religious dimension arises from mistaken perceptions as described above because the perceptions themselves are on some occasions so convincing. In certain circumstances, the sense of a personal presence in a phenomenon may be so strong that the experient is unable to accept that no *personal being* is present, although he or she may recognize that no *human being* is present.

Consider a hominin approaching a shady grove where a spring trickles from a gap in a rock face above. From a few metres away, the leafy flicker of sunshine and shade combined with the irregular bubbling of the spring induce a sense that someone is moving to and fro and that a voice is speaking. The hominin waits for some time, listening to the putative voice from the stream and watching the movements of the shadows. The period of still attentiveness convinces him or her more and more that a stranger is there. On coming closer, the hominin discovers that the place is empty of other hominins, but the conviction of a sentient presence has by this time been strongly impressed. The hominin concludes that someone may indeed be there, but someone not human, and evidently not an animal either, someone who remains concealed. The process of drawing this conclusion is not one of conscious, explicit deduction involving predetermined categories of 'human', 'animal' and 'person neither human nor animal', but rather the dawning of a notion in the light of the given perceptions. The notion is of the possibility of a *numen*.

Numinousness and the origin of numina

The question to be dealt with is this: why should the mistaken perception of something human or human-like give rise to specifically religious feeling?

Marett characterizes religious sense or instinct as composed of several 'moments': fear, admiration, wonder, awe, and even love. These arise from the unknown, in the sense that the subject's power of natural explanation is inadequate to account for the phenomenon (Marett 1914: 10-11). He suggests that this emotion of awe and wonder promotes the impulse to personify the mysterious object,

whereas, on the basis of Guthrie's proposal, it appears to me that the perception and the act of personification is prior to, not subsequent to, the feeling.

Karsten (1935: 25) states that, for primitive people, the supernatural generally enters into or coincides with nature. The mystery arises from the subject's inability to grasp the nature and connection of things, an ignorance of natural law. What is 'divine' is always something mysterious which awakens sentiments of admiration, fear and awe, but need not be identical with the sublime or a power elevated above nature. In other words, the *numinous* need not have the character of sublime venerability but does involve fear of the unknown.

This is the justification for referring to the putative personalities or conscious agencies associated with certain phenomena as *numina.* Otto gives a number of 'moments' which compose the numinous sentiment in various contexts. In dealing with primordial religion, given the evidence of primitive religions, I think we can dispense with such moments as reverence and self-abasement. The numinous feeling which we have to deal with is, I believe, principally fear; and, in contrast to 'natural' fear, it contains the moment of the uncanny. In this respect, I think Otto was probably correct that there is a sentiment peculiar to religion or the supernatural (Chapter 3). It may be that William James and others are insufficiently precise as to the moments composing the emotions which they claim to be common to many departments of life.

In a scientifically literate society, we do not run out to remonstrate with a thunderstorm. This is because we know, at least vaguely, that there is an explanation of the phenomenon in terms of impersonal forces on which we can have no effect by merely shouting. The same applies to all the other natural phenomena, volcanoes, strange trees, waterfalls, hot springs, caves and the like, with which numina have been associated by our predecessors. We may still be afraid of the phenomenon: for example, we could be struck by lightning; inside a cave there could be a wild animal, or the floor might fall away in a hidden sheer drop. But now the fear is of the known or of known possibilities. We do not assume that there is some conscious being whose whims we have to take into account in deciding a course of action.

If we went into a cave and a bear suddenly appeared, we would be faced with a conscious agency, a personality of sorts, whose whims would have to be taken into

account. The fear would be real enough, but there would be no sense of the uncanny. What prevents a sense of the uncanny is, I suggest, that we can see the bear. Seeing it, we can deal with it, probably by running away.

If in the cave there were odd bear-like sounds but no sight of their source, then it is likely that we should be led to experience a sense of the uncanny. The invisibility of the putative object of fear, and a consequent inability to deal with the object causes fear to continue. We cannot ignore the possibility of a sentient being, because of inconsistency in the evidence which we cannot tolerate: some signs but not the others which should accompany them and make sense of them. For instance, if we heard bear-like sounds as a sign of a bear's presence, but inconsistently there were no other signs such as a sight or touch or breath of the bear, or disturbance of the surroundings such as rocks being rolled aside, then I think we would be led to have an uncanny experience.

Recall that human beings and other animals animatize, and we do so because it is important to be aware of predators, prey and members of our own kind in our surroundings. Of those three, the most important to detect are predators or, for humans, our conspecifics: either of those represent danger. Whether it is veridical or mistaken, a perception of something which may represent danger results in emotions. Guthrie argues that 'emotions are compound states of mind and body that include perceptions of situations'. It seems that perception, whether conscious or preconscious (Chapter 4), is prior to or accompanied by the associated emotion (Lazarus 1984; Zajonc 1984: 118-119, 121-122), and the emotion in question is fear.

In our long prehistory as hominins, we first had an ape-like way of life and later were hunter-gatherers. Throughout this time we had to be alert to possible dangers in our environment. As hominins, humans or prehumans, when we perceive signs of danger, we prepare for action, which takes the form of fight or flight. Adrenalin flows, our state of alertness is enhanced. We thrill with the anticipation of seeing a predator or assailant at any moment. If the danger then appears in the form of a person or animal, we deal with it by fighting or fleeing, thereby utilizing and discharging the energy of the state of alertness which our body has assumed.

What if we have a sense that something or someone is there, but the danger does not appear? In the heightened state of alertness, we are unwilling to accept that

nothing sentient is there. Our pounding heart, our strained breathing and our very hormones do not allow us to stand down from alert. So we continue to act as if a danger is there, but it is invisible. Our alertness and fear are thwarted of a visible object to deal with. Now the ongoing thrill and fear are directed towards an invisible object. The ongoing persuasion that there may be a person or creature which has to be dealt with, but the inability to see and satisfactorily deal with that putative person or creature causes the fear to continue. The mystery continues along with the fear, because no being has been satisfactorily apprehended as an object of the fear.

It may be that the ongoing, undischarged state of alertness itself suffices to introduce into the fear the specifically numinous quality discussed in Chapter 3. I have hypothesized, in Chapter 5, that this feeling has as its neural substrate a particular type of intense activity in particular nuclei of the amygdala. In some cases, however, I suggest it is possible that the ongoing fear may stimulate subcortical structures in such a way that a specific sensed-presence experience is induced.

Sense of presence

In a state of fearful anticipation, as described above, the amygdala and hypothalamus are active. The amygdala mediates fear and anxiety, and hypothalamic nuclei mediate the state of alertness, connecting with the autonomic nervous system and preparing us for fight or flight. While fear and alertness remain undischarged, because we have no object to deal with, it is possible that activation of these subcortical and brainstem structures reaches a stage which provokes inter-hemispheric intercalation (Chapter 5). The right-hemisphere sense of self intrudes into left-hemisphere awareness. This experience will be interpreted as confirmation that there is a sentient but invisible being in the vicinity. In an extreme case, the intrusion may be accompanied by somatosensory data from the right hemisphere, and we may even visualize a shadowy humanoid form. This will be interpreted as overwhelming confirmation of the presence of a sentient being, something which can become visible apparently at its own whim, and something which probably looks vaguely or incompletely human.

As discussed in Chapters 3 and 5, the sense of presence is loaded with numinous feeling. If a sensed-presence experience occurs, then to the experient it

must seem that not only have we anticipated that something was there, but now we have actually encountered it, and it is something uncanny.

The scenario given above posits fear of the unknown, in places where someone could be but is not seen, as the basis from which the experience arises. The evoking factor is a form of environmental stress, comparable with some cases from the experiments of Wiseman et al. (Chapter 5). The experimental case where a subject entered a darkened vault from a brighter passage is particularly comparable with the scenario of a primordial person entering a cave or shady grove.

Equally, it is possible that, in some places, local electromagnetic activity arising from geological processes may have directly influenced temporo-limbic structures of the human or prehuman brain, so that individuals were induced to experience intercalation and a sense of presence, without the prior stage of anticipation. While it is not possible to conduct experiments on primordial people, it would be possible to investigate localities which have been popularly regarded as numinous, either in local folklore or by tribal peoples, and test for unusual electromagnetic fields.

I suggest that, in remote antiquity, evoked by the stress of anticipation or directly in certain places, the sense of presence loaded with numinous fear was the origin of the idea of local *numina* or *daemons.*

Lightning, storms and winds are not, in the way that caves, waterfalls, trees, groves and the like are, places or objects. Even so, the explanation of the numinous experience is similar. Again, as primordial humans or prehumans, our propensity to animatize leads us to feel that we are in the presence of an angry personality, which seems to be intent on frightening and harming us. Again, no recognizable sentient agent appears, but we are thrilled and on the alert because of the phenomenon, and cannot stand down from the state of alertness. We assume that the danger continues to be present, except that the personality is invisible or at any rate not clearly recognizable or on a human scale. It is therefore conceivable that ongoing fear of an approaching storm, leading to heightened activation of the amygdala and hypothalamus, might evoke the sense of a presence. The presence would then be identified with the personality of the storm. So we think we are in the presence of a

powerful numen. Thus is the belief engendered that large-scale natural processes are gods.

Development

In situations where we become fearful that something sentient is there, but no recognizable creature appears with whom or with which we can straightforwardly negotiate, then, if we are led to have a presence experience, we think there is a daemon. We think there is some agent which needs to be dealt with, but the agent is invisible. Even if it does appear, it may not approach visibly like a normal creature but just appear on the spot, and perhaps hazily. It therefore cannot be dealt with straightforwardly; it is mysterious. It is uncanny because it is imbued with the numinous feeling.

Consider a cave, grove, waterfall or other geographical feature where we have had a numinous experience. It is not just on the first occasion of having such an experience in a certain location that the numinous moment occurs. When we revisit the scene of a previous numinous encounter, we shall expect the numen to be there again. Thus some locations will come to be accepted as the dwellings of daemons. On each subsequent visit, the fear will be evoked, and will from the outset have the character of the uncanny. When a strong wind buffets us or a storm or lightning approaches, we shall imagine that it embodies the same personality as the one which previously evoked the sense of presence. We shall think it is the same god.

No language is necessary to have these experiences and beliefs. Beliefs about the existence of numina are not so much thought as felt, and need not be shared. For many thousands of years, I suspect, the 'belief' in daemons and gods – that is, the *feeling* that daemons and gods existed – persisted without ever being spoken about. Numinous feelings were re-experienced by individuals in each generation. However, when later human beings possessing speech communicated those experiences to others of their people, they will have established a folkloric geography of numinous places and a folkloric meteorology of numinous aerial phenomena. These will have developed into a classificatory ontology of numina.

In a rather trite way, Otto's *mysterium tremendum et fascinans* is accounted for by this proposal. The natural phenomenon is one for which we have no explanation, so it is a mystery. We fear it, so it is tremendous.

Objections

In Appendix 7A, I deal with some objections to the animatist hypothesis.

Primordial interpretations of the sensed-presence experience

Daemons

I have concentrated above on the fact that the lower animals and ourselves have an animatizing tendency. Then I have tried to show how in humans or prehumans this could lead to the belief – perhaps better, *feeling* – that a sentient being is associated with an inanimate natural phenomenon, and how this feeling could be accompanied by numinous fear. I described how in those circumstances the sensed-presence experience may play a part in bringing about or enhancing the numinous fear and in confirming for the experient the idea that an invisible sentient being is present. In this way, it is suggested, the idea of a daemon or *genius loci* entered the minds of humans or prehumans.

Demons

However, in Chapter 3, I discussed modern sensed-presence experiences which were more or less spontaneous. In particular, the occurrences in sleep of incubus and Old Hag encounters are suffused with numinous fear. Could such encounters have played a part in bringing about the idea of supernatural beings? On a *prima facie* basis, it would be incredible if such experiences did not have an effect on the ontological beliefs of those who endured them. It seems certain that human or prehuman subjects believed supernatural beings of some kind came to them in sleep.

There is a difference, however, in that the presences encountered in sleep are not associated with natural objects, locations or processes. Unless the experient habitually has the experience in a particular sleeping place, such as a cave or grove, and associates it with that place, the presences will not seem to be *genii loci.* They are probably not going to be interpreted as *daemons,* in the narrow sense of *genii loci* or minor gods, but they may be interpreted as *demons,* in the sense of a free-ranging

spirit being. It is not that the experient assimilates the experience to a preexisting concept of demon, because we are discussing a period when there would have been no such concept. On the contrary, the incubus and Old Hag are probably the *origin* of the idea of demons and evil spirits, as has been proposed before. Clodd (1891, quoted in Jones 1931: 73) refers to 'the nightmare ... to which is largely due the creation of the vast army of nocturnal demons that fill the folklore of the world'.

I do not assert that very early people excogitated the difference between daemons and demons and invented a terminology which placed both under the category of 'supernatural being'. Rather, I am saying that probably they distinguished the ideas. They imagined there were supernatural beings: that is, invisible or intermittently visible creatures associated with numinous fear. They further imagined that some were located in places, objects or processes such as weather encountered in the waking state, while others came to them in sleep. It is we who choose to give those types distinct names, while I suspect that primordial people merely recognized the types. Thousands of years after primordial people knew of different types of experience, at some much later stage in prehistory when old people sat round the campfire and exchanged ideas, stories might be told which would explicitly categorize the types of being.

Visible frightening presences, as recounted by Hufford and others (Chapter 3), often appear as humanoid entities, but only rarely represent identifiable living or even deceased individuals. These experiences, of incubus and Old Hag, tend to take place in anomalous REM sleep. The further issue arises that in dreams people sometimes meet other people. Sometimes those whom they meet are alive, and sometimes they are dead but appear alive in the dream. Such dreams tend to be normal dreams, taking place in true REM sleep, following stage 2 sleep, and are usually not frightening, even if the dead are encountered. A normal dream seems to occur in different circumstances from the sleeping sensed-presence experience. In the next chapter, dreams come into play as part of the explanation of the idea of soul.

Dating

The concept of soul and, *a fortiori,* the concept of a soul-like spirit would appear to be the products of conscious reflection, to be discussed in Chapter 8. In contrast, the tendency to imagine personality in inanimate objects is not the product

of conscious thought but the outcome of an unconscious interpretative perceptual strategy. I follow Marett in concluding that animism proper, with its human souls and soul-like spirits of other things, is predated by animatism. The tendency to animatize predates the Order Primates, let alone the genus *Homo*. Here we deal with not soul-like spirits but numina, personalities of phenomena – personalities of places, things, events, human-like personalities of non-human animals and even, for our non-human ancestors, ape-like personalities of non-ape phenomena and animal-like personalities of non-animal phenomena. We may therefore conjecture that the origin of the concept of spirit beings, in the sense of mere numina, could date from a very remote period.

My own suspicion is that animatism is older than the genus *Homo*. It may be that we see a rudimentary animatism, or at least the precursor of animatism, in the rain dance of Goodall's chimpanzees and the leaping about at a waterfall by another chimpanzee (Chapter 6).

Animatism for hundreds of millennia must have been unthinking and inchoate. For individual humans and prehumans it would have consisted of such experiences as a suspicion of shadows, a frisson at the entrance to a darkling cave, excitement at the noise and movement of a waterfall, terror and rapture at the sound and spectacle of a thunderbolt striking a tree.

A more organized conception would have to await the development of language and the ability for one individual to communicate his or her sensations to another. Eventually, communicated experiences would result in a common world view within a small tribal community. Such communications between individuals would, in the course of tribal history, be dominated by intellectually acute or imaginative individuals. Here we are not yet talking about reasoning as such, but rather about individuals expressing their own felt reactions, hearing those of others and making sense of them, possibly in the form of story. At some stage, a consensus might develop and be passed on from one generation to the next. The story would be that some phenomena in nature were non-human persons aware of what went on in their vicinity. At this stage a recognizable animatism similar to that of some recent tribal peoples would have come about. I suspect that such developed animatism certainly existed from the outset among the people of the European Upper

Palaeolithic, and probably existed among their predecessors of the Eurasian Middle Palaeolithic and the African Middle Stone Age.

CHAPTER 8

ANIMISM: GHOSTS, SOULS

The soul may be described as the animating principle of a human being, which is associated with the body in life but may sometimes leave the body in life, to return later, and also may survive the death of the body (Tylor 1924, II: 24). In contrast, a spirit being or daemon is a more or less self-aware entity which generally is not itself seen. It may move around but may inhabit or be responsible for what we call inanimate objects, as well as places and natural phenomena. A spirit being is capable of interacting with physical objects and with human beings. It is a personified cause of events (Tylor 1924, II: 108).

Whereas one thinks of souls as being associated with, usually, living things, spirit beings are generally thought of as being more or less independent of visible objects and free to roam around. The realm of spirit beings includes everything from elves through demons to gods (Tylor 1924, I: 426; II: 110).

According to Tylor (1924, II: 110), the concept of soul is temporally prior to the concept of a spirit being, the latter being derived from the former. As discussed in Chapter 7, I follow Marett and disagree with this proposition.

It would take a book in itself to set about listing and comparing instances of the concept of soul from different cultures, and that has in any case been done by Tylor and others. In this chapter, I try to present an argument explaining naturalistically the origin of the concept of soul, supplementing the original Tylorian theory with other evidence, then deal with a number of classic objections from Evans-Pritchard, Durkheim and Lang. I then relate souls and animism to spirit beings and animatism, which were the subjects of the last chapter, and finally try to place the origin of the concept of soul at a given period of prehistory.

The argument

Dreams and death

The essential Tylorian argument concerning the origin of the concept of soul runs as follows. I have based my version upon a certain passage in Tylor (1924, I:

428) but do not follow his train of thought exactly. I am concerned here to give what I believe to be the essence of the argument, not to expound Tylor as such.

In dreams, relatives and others who have died may appear to the dreamer. This phenomenon gives the idea that the dead are in some way still active. Since the body is clearly inert or may have been disposed of or destroyed, there must be some other part of the dead person that survives. Further, in a dream a person may meet or see another person who is alive but elsewhere. Trances and hallucinations, however brought about, may produce the same effect as dreams, of seeing an image of someone who is elsewhere or who has died. Sometimes a waking person at a distance may think they meet or see a person who is in fact alive, perhaps sleeping, elsewhere. What people see has the appearance of the body, while the actual body is elsewhere or inert or may even no longer exist. All these phenomena give the idea that some part of the person, other than the body, is able to move around and act independently. Thus is produced the idea of what Tylor initially calls the *phantom.*

When someone dies, it is as if something has left the body, namely some principle or entity which animated it, enabled it to feel, think and act. When people are laid low by disease, it is as if the connection between the body and that animating principle becomes more tenuous. Also, when someone is asleep, it is as if the animating principle is absent or at least more tenuously connected; because, while the person is asleep, although they breathe, they do not interact with their surroundings so fully as they do when awake. The animating principle Tylor initially calls the *life.* In my view, the *life* is not an abstraction but more or less identical with the breath, since in sleep breathing may be reduced and in death absent. This is discussed further in Appendix 8A in connection with Lang's objections.

The next step is to identify *life* and *phantom:* this entity we call the *soul.* Tylor does not make the point explicit, but it would seem particularly easy to make the identification between the *phantom* of a living person seen by others and the *life* of that person while asleep. Indeed, he reports the case of St Augustine having dreamed that he visited a disciple while the disciple, apparently waking, received his visit (1924: I, 441). So people have the experience in dreams of visiting places, while the body remains inert in the sleeping place, apparently without life.

In a series of chapters on animism Tylor gives copious examples to illustrate the currency of the idea of soul, in forms more or less as described above, in a number of cultures. I offer just one as an instance of what he is talking about, from another authority. Among the Bukaua of New Guinea, it was believed that the soul leaves the body during sleep and during a fainting spell; when a person awakes, the soul has returned; death liberates the soul from the body (Lowie 1948: 59).

The dream image seems to show the soul apart from the body, so it is what Lang calls a *separable soul* (Lang 1898: 57). The fact that a person who has died may be seen again in dreams gives the idea that the soul may survive the body (Tylor 1924, I: 428-429).

Out-of-the-body experience

In the twentieth century the attention of researchers was drawn to 'out-of-the-body' experience and the related 'near-death' experience. These have been the subject of a large number of studies since Tylor's time. Green (1968: 17) defines the out-of-the-body or 'ecsomatic' experience as 'one in which the objects of perception are apparently organized in such a way that the observer seems to himself to be observing them from a point of view which is not coincident with his physical body'. More succinctly, Blackmore (1982: 9) defines it as 'an experience in which one seems to perceive the world from a location outside the physical body'.

Some examples from Blackmore (1982: 40, 48, 49) follow. In one, the subject, who had been in bed at night, became aware that he was bouncing against the ceiling, and could look down and see himself lying below. Another man suffered severe cramp in his legs at night, got out of bed and fell in pain to the floor. Next, he saw his wife and daughters trying to lift him up. The conscious part of him was looking at his corporeal self on the floor. In another case, a man was given an anaesthetic prior to an operation; he felt suddenly torn apart, then calmness followed. He saw himself lying on the operating table. He himself was freely floating and looking down from above; he could see the wound of the operation and the surgeon holding an instrument (*cf.* others among numerous hospital cases, in Green 1968: 24, 121, 123).

Sensations during an out-of-the-body experience are often heightened: colours are bright, exaggerated, and hearing may be acute (Green 1968: 72; Blackmore 1982: 68). The experience as a whole is often vivid, and the subject may feel a much greater degree of intellectual capability, freedom and strength than in everyday life. For many subjects the experience is both exhilarating and more real than ordinary life (Green 1968: 81-87).

In the near-death experience, a person who is seriously ill or undergoing surgery recovers later and recalls the sensation of being outside the body. Often during this experience the person looks down at his or her body from above. Sometimes, when in surgery, the body is seen lying on the operating table. Sometimes there is a sensation of leaving this world and travelling down a tunnel, at the end of which a bright light streams. Experients may see deceased relatives or angels or other religious figures coming to meet them. At some point they may be given to understand that they have to return (Blackmore 1982: 138, 147-148). To some degree, what one experiences may be conditioned by the background of the subject. For example, Indian subjects saw a higher proportion of religious figures, while American subjects saw more visions of the dead (Blackmore 1982: 140).

Near-death experiences often have a profound effect on the subjects. Those who have had them are often changed for life, becoming more religious, more disposed toward compassion and service (Blackmore 1982: 149, 150).

Shiels (1978: 714-727) maintains that beliefs in out-of-the-body experiences occur in a wide range of societies outside modern western culture, including tribal societies in Africa, South America and the Far East. A common belief is that the double or soul (sometimes one of several types of soul) leaves the body at death, and can leave the body also in sleep or dreams. In some cultures it is only shamans' souls that are believed to be able to leave the body during life. Strictly, what Shiels brings to notice is the cross-cultural belief in the travelling double, already documented by Tylor, rather than out-of-the-body experiences as classically described by Green and Blackmore. The latter, as noted above, include features such as looking down at one's own body, travelling through a tunnel, and the rest. Shiels does not document such details or correspondences. However, the experience of shamanic flight is clearly, for the subject, an out-of-the-body experience in a generic sense. Equally, the

idea of the travelling double clearly implies a belief that a person, or some part of a person, can leave the physical body.

Out-of-the-body experiences are frequently preceded by the physical trauma of illness or injury, or by fear. Stressful circumstances reported include illness, war injuries, preoperative and postoperative situations, impending accidents and ongoing dangers such as falls (Green 1968: 25-26).

For the present, I leave aside the question of the reality of the out-of-the-body experience. All I am concerned with here is its probable bearing on the origin of the concept of soul.

I have found no evidence in the literature to indicate that out-of-the-body experiences should be a recent development in human psychology. If those experiences are fairly frequent in modern times and occur in people widely separated geographically and culturally, as they do, then they appear to be a common property of human mentality. It seems legitimate to accept provisionally that ancient people were also subject to those experiences from time to time.

One can imagine a hunter many millennia ago, severely wounded in the course of a hunt or traumatized by a fall from a rock ledge, perhaps close to death, becoming unconscious and experiencing sensations of leaving the body and being apart from it. Rescued and after recovery, one can imagine him relating the experience to his fellow tribesmen. They would testify that his body was present all the time, while he would aver that he had been absent. The tribesmen might not find the need for an explicit explanation there and then, but an inkling that he or a part of him was separable from his body might occur to them, even if the inkling remained unspoken. Stories would be told for generations of how he left his body, which might be said to have died in the meantime. At a later date, a religious innovator (Radin 1938: 15ff) would connect this story to other stories about people's dreams, and tell a new story about a *soul.*

For the subjects reported in the cited references the sensation of being out of one's body was impressive and unforgettable. It is hard to think of anything which could more forcefully induce or, after it had been induced, corroborate the idea that one has a soul or separable consciousness, than the experience of seeing one's body from the outside. Out-of-the-body experiences are less common than dreams: most

people dream; most people do not have out-of-the-body experiences. Even so, a first-hand story about an out-of-the-body experience could be seen as convincingly corroborating any ideas about the existence of soul which had already taken root in people's minds. Similarly, a first-hand story about a near-death experience would strongly encourage belief in personal survival.

Evidence and objections

Tylor's theory of the origin of the concept of soul has of course been widely criticized, along with his whole approach to anthropology and religion. I do not think he is correct that the idea of soul preceded or was the template for the idea of a spirit being, which I believe to be a more fundamental concept. However, I think he is right about the likely origin of the idea of soul. I shall proceed to show why.

Evans-Pritchard argues that there is no evidence that the idea of soul arose in the manner that Tylor says it did, and that the best that could be done would be to show that primitives themselves cite dreams as evidence for the existence of souls. This has not been shown, and he is dubious whether it could be shown (Evans-Pritchard 1965: 25).

It is certain, however, that the 'primitives' of the nineteenth and twentieth centuries are not the primitives who first came up with the concept of soul (Lang 1898: 62). Like ourselves in the West, recent traditional Africans, Australians and the rest stand at the end of a long lineage of societies possessing religion (*cf.* Lowie 1948: 125). They are no more the first societies with religion than we are. The reasons which recent native informants in those societies might cite for a belief in souls would be latter-day rationalizations and, for all we know, might bear little connection with the reasons or feelings which motivated the originators of the idea many millennia, perhaps tens of millennia, ago. Given this position, it is irrelevant whether or not recent tribal informants cite dreams as a reason for believing in souls.

However, the belief in souls did arise, somehow and at some time. Tylor points out that the presence of modern household objects like scissors and matches in every village in England does not invalidate the proposition that there was a time when none of those things existed. Equally, there was a time when man was in a non-religious condition (1924, I: 425).

Savage philosophers

Tylor has been accused of making philosophers of savages. He himself uses the phrase 'the ancient savage philosophers' (1924, I: 428). He imagines how a primitive person might contemplate experiences, as described above, in waking life and in dreams, about death and sleep as witnessed in others, and might come to the conclusion that people have souls.

It is claimed that this intellectualist approach attributes too much interest in reason and speculation to people living in societies which had to be concerned with the essentials of life, seeking food, shelter and reproductive success. Primitive man was not a philosopher *manqué* and was too busy dancing out his religion to think it out (Marett 1914: xxxi). Marett here considers theories about reasoning by primitive people to be too intellectualist to describe the thought processes of individuals at the beginnings of religion. However, it is fair to say that at this point Marett does not name Tylor, and here he was concerned not with the soul as such but with spirit beings in general, with animism, and with the phase of animatism which he regards as its necessary and much more primitive predecessor.

Primitive people, it has been claimed, besides having no time to spend on talk and reflection, are afflicted by 'intellectual laziness'. They, being only 'weak beings, who have so much trouble maintaining life against all the forces which assail it, have no means for supporting any luxury in the way of speculation. They do not reflect except when they are driven to it' (Durkheim 1915: 58).

In the first place, although Tylor uses words such as 'dogma', 'doctrine' and 'theory' (1924, I: 426, 442) to describe the presumed initial conception of souls, I suspect he did not intend us to imagine the primaeval thinkers suddenly crying 'Eureka' as the concept occurred to them, then sitting with a philosopher's frown by the campfire, codifying and elaborating their ideas, and teaching them to the youth of the tribe. He says the concept of the human soul was elaborated and extended to animals, disembodied spirits and eventually gods (1924, I: 426). But these elaborations need not, on the basis of anything Tylor says, have been conceived in the same generation or among the same population as those in which the idea of the human soul was conceived. That too may have been conceived several times in different places by divers human groups, and repeatedly invented by numerous

inventors and then forgotten, lost until the next time, unless an inventor did manage to discuss and pass on his or her idea. All that the Tylorian theory requires is that a vague idea should dawn in the minds of primordial people; that it should be spoken of not necessarily the first time round, but eventually, and elaborated perhaps generations later into a more detailed story of what the soul is and can do, and perhaps thousands of years later still into a comprehensive tradition involving other kinds of souls and spirits.

The criticism of Tylor as being too intellectualist arises, I think, from a misapprehension of what his theory requires. Even if the vocabulary with which he phrased his argument may give rise to that misapprehension, it is rational not to be led astray into an absurdity which it is unlikely that a great scholar would have intended. Instead, we can respect his insights and try to use them judiciously to rethink what could actually have happened to bring about religion in prehistory. I add that here I am concerned only with the origin of the concept of soul, not with the later alleged elaborations to spirits and gods.

In fact, as is well known from more recent ethnography, 'savages' can be and often are philosophers (Malinowski 1948: 16-17). They often have time – in some cases, more time than we in the West have – in which to talk about and reflect on their experiences. A few examples will suffice. In West African traditional societies, there are often old men retired from the occupations of the middle part of life, who have the leisure to think about and discuss the nature of their world. Further, such old men play a major part in transmitting ideas to the next generation (Horton 1993: 56). Hunter-gatherers and tribal agriculturalists in Australia, Africa and the Americas built up elaborate classifications of plants and animals on which they depended (Lévi-Strauss 1962: 35ff). Within their daily routine, clearly there was time to pass on these detailed conceptions to new generations. Far from barely subsisting in what must be one of the harshest and least promising environments in the world, the San of the Kalahari spent much of their time in camp, talking within and across family groups. The participants in discussions might be engaged in sedentary tasks, making things, or just lying around (Tanaka 1980: 101, 108). In the same study of the San, the average length of time spent by men out of the camp per day was found to be only 6.29 hours, by women 2.93 hours; some days they were not out of camp at all

(Tanaka 1980: 76). Among the !Kung, talking and relating experiences was the main source of entertainment, and people sat around for hours talking to one another (Marshall 1976: 351-355; Konner 1976: 249). It is clear that a hunter-gatherer way of life does not by any means occupy so much time that people have no opportunity to think and talk.

By the middle of the Upper Palaeolithic in Europe, human beings there had reached a level of hunting and gathering subsistence comparable with that of recent hunter-gatherer societies such as the Native Americans of the North West Coast (Hayden 1993). It is therefore plausible to postulate similar availability of time for reasoning and theorizing to individuals among those prehistoric people. It is therefore conceivable that they possessed the idea of soul.

The objection to savage philosophers is dealt with in another way by Stringer (1999). In his analysis, Durkheim (1915) and Evans-Pritchard (1965: 25) interpreted Tylor as saying that primitive people made a deduction more or less like this: there are dreams which show dead people, there are trances in which people appear when they are far away, ..., therefore there is something of those people independent of the body – a soul. Evans-Pritchard clearly thought it unrealistic to expect primitive people to have made such a deduction. Durkheim said, 'in order to thrust itself upon men with a kind of necessity, this idea would have had to be the only plausible hypothesis, or at least the simplest' (1915: 53, quoted by Stringer). However, following Lowie (1948), Stringer claims that Tylor was really listing facts about primitive and civilized people's concept of soul, demonstrating that it is a universal concept in all societies, and then putting forward a reasonable explanation of those data. That is, he was giving an explanation why people everywhere have the concept of soul. He was not presenting irrational beliefs as rational, but presenting a rational explanation of why people hold irrational beliefs. Tylor's theory based on the dream image and the life is one possible and very plausible explanation of the facts (Stringer 1999: 544).

But what is Tylor's rational explanation of why people hold the 'irrational' belief that there is a soul? It is that in early times people made the connection between the dream and trance image of an absent person and the life of the person. They came up with one concept, the soul, which unified the two earlier concepts.

They went through some reasoning process. Tylor was then indeed, as Stringer says, not presenting irrational beliefs as rational. But he was presenting a theory that primitive people arrived at the concept of soul by means of a process of reasoning, however vague or perhaps, by our standards, faulty. Very little to promote or rescue Tylor's theory is gained by the attempt to analyse it as purely a rational explanation of why people hold irrational beliefs.

It is better, I think, to acknowledge that Tylor did require savages to be, to some degree, philosophers. Then we find from ethnography that hunter-gatherers do after all have the time to be, and often are, philosophers, and are perfectly capable of the ratiocination required to produce the idea of the soul. We can then extrapolate from the evidence of recent hunter-gatherer, 'savage' societies to those of the past. We therefore look for the origin of the concept of the soul in the context of bygone hunter-gatherer societies of comparable complexity to those of the most primitive of recent times.

I distance myself from the presupposition in the foregoing that the belief in the soul is an irrational belief. Whether it is irrational is a question left in abeyance for my purposes here. My concern is to account for its origin.

Strangely, Stringer has claimed that Tylor's was not a 'theory of origins', although, according to Stringer, all critical authorities have treated it as such, and he says this is the reason why they have misinterpreted, in the way of Durkheim and Evans-Pritchard, the nature of Tylor's argument (Stringer 1999: 543ff). He says categorically, 'Tylor is not interested in how religion originated' (Stringer 1999: 548). However, if Tylor was trying to offer a plausible explanation of why people believe in a soul, then it seems to me that any such explanation is a theory of the origin of the idea of soul. Stringer says (1999: 545), 'For Tylor, the theory is descriptive,' and yet he notes that Tylor hypothesizes 'the sequence in which they [the religious concepts of soul, spirit being, ...] are supposed to have arisen one out of another' (Tylor 1866: 85). Notice that Tylor does not even say 'one after the other' but 'one *out of* another' (emphasis mine). According to Tylor's description, the idea of soul leads to the idea of spirit beings which either are or inhabit other creatures and objects (1871, II: 109-111), and ultimately to the rest of religion – or, in my terms, to further religious elements. For he says, 'although it [animism] may at

first sight seem to afford but a bare and meagre definition of religion, it will be found practically sufficient; for, where the root is, there the branches will generally be produced' (Tylor 1924, I: 426). It seems clear to me that Tylor had in mind to offer a theory of religious origins.

Classical objections

I deal with the objections of Lang and Durkheim in Appendix 8A.

The numinousness of souls

In Chapter 5, I proposed that the supernatural fear or numinous fear is associated with specific amygdalar activity. How does that come about in relation to souls, wraiths and ghosts?

Marett says (1914: 23-24), 'The thrill of ghost-seeing may be real enough, but I fancy it is nothing to the horror of a human corpse instilled into man's heart by the instinct of self-preservation'. The dead body of one of our conspecifics is an unwelcome reminder of our own mortality. It is an affront, a threat, to our sense of self. It evokes a degree of stress which we may theorize induces activity in temporo-limbic structures corresponding to an uneasy numinous feeling.

This horror of their own dead is not felt by chimpanzees, it would appear, but they do exhibit a certain interest in the strangeness of a corpse (Chapter 6). I suggest that the threat to our self is felt even if the corpse is that of an enemy whom we have killed. However, soldiers accustomed to battle and others who constantly deal with death, such as mortuary workers, may become inured to the sight of corpses. Familiarity should reduce stress, and with it the probability of numinous experience.

Given the idea of a soul, the primordial person associates the horror or potency of the dead body with the wraith or soul. That this potency is assumed is indicated by the widespread use of parts of a dead body in apotropaic and other magical practices by tribal peoples. Belief in the soul's continued lingering with the body, even if the former is conceived as something which is separable, is well known from the ethnography of tribal peoples as well as from the practices of more developed eastern and western societies (Chapter 9; Paton 1921: *passim*). The facts that we take the trouble to bury or dispose of a corpse with funeral rites and that people visit cemeteries indicate that the body is not seen as just a husk left behind by

a soul which has flown. The focus of reverence for ancestors in Chinese civilization is as much the grave as well as a domestic shrine. The ghost or disembodied soul is therefore most likely to be encountered with the body. Even if the body is out of sight in a grave or has mouldered away, the location where it lies or has lain may still be the habitation of the ghost.

The basic fear of the ghost, which, with Marett, I suggest is transferred from the corpse, is overlain in all societies by cultural ideas. These concern the nature of the soul and its longer-term fate: whether it survives at all or beyond the memory of the living who knew the deceased in life, whether it goes to an underworld, to the isles of the blest, to heaven, and so forth. Even so, I think the underlying fear is that the dead body is not completely inanimate: that the body may come back to life, but not life as we know it. It would be bearable if the person had not died after all but had only been unconscious, and could now resume his or her normal life.[1] But the fear is lest a genuine corpse should be reanimated not to a normal state but in its new state of *post-mortem* strangeness. It is as if the former tenant is still there, no longer contained in the body in a normal manner, but by a more tenuous connection. The fear of the body is transferred to the ghost, and becomes a fear that the now-strange dead person, even as an insubstantial phantasm of its corpse, should appear to us and be active again.[2] In some tribal societies, such as the Washo of California, great precautions were taken to avoid having the deceased return, even to the extent of burning their houses and possessions so that a ghost would not have anything to return to. All in all, once we have accepted a death, we want the dead to stay dead and not trouble us (Harris 1997: 8; Downs 1966; Boyce 1975: 124-125; Frazer 1933; Paton 1921).

Sleep and dreams are widely felt to have a mysterious quality in their own right (Bear et al. 2001: 614). The dream appearances of a person cannot but take on an extra mystery if that person is dead. The ghost therefore can scarcely fail to be an object of numinous sensation.

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[1] The raising of Lazarus, who after four days in the tomb had begun to stink and is thereby confirmed as really dead, is perhaps only bearable because it is Jesus that raises him (John 11: 14-44).

[2] This fear can be recognized in a scene in the French film *Les Diaboliques* (1952). A colleague and the wife of the apparently murdered principal have deposited his body in the bath and covered it with water. Later, the wife walks into the bathroom and witnesses the corpse raise itself out of the water. She shrieks and runs away, and the audience experiences the thrill of numinous fear.

If the stress and thrill of being in the presence of a dead body, of having seen a dead person in a dream, or of being in a place where someone has died are sufficiently strong, then I suggest that limbic activation, already producing numinous sensations, may reach such a level as to provoke inter-hemispheric intercalation, following the theory of Persinger (Chapter 5). As the right-hemisphere sense of self becomes accessible to left-hemisphere awareness, a sense of presence will be felt. In the given circumstances, the presence will be interpreted as the ghost. At worst, an hallucination in which the subject actually sees an apparition will occur. If the apparition takes on a recognizable humanoid shape, it is probable that, since the subject is thinking about the deceased person, association data from the temporal cortex will clothe the apparition in the form of the deceased.

Relation of soul to daemons and the rest of religion

Marett believes that a preanimistic phase of religion preceded the phase of animism, which latter includes spirits generally and the souls of people and animals. I concur with him on the precedence of his preanimistic phase.

He proposes (1914: 9), like Tylor, that the souls or spirits of the dead are the prototype of spirits of other objects, such as rivers, stomach-ache and so forth. The revenant of dream or hallucination, which he usually refers to as the 'dream-image' or 'trance-image', possesses exactly the ghostly quality to which spirits are asserted to conform, a type of what Tylor called 'vaporous materiality'. He therefore regards the derivation of *soul* from dream or hallucinatory images of the dead, and then *spirit* (of non-human objects) from *soul*, as 'one of the few certainties' which anthropology can claim. However, he recognizes that a further question arises: how 'an animistic colour' could have become attached to other objects that are not connected with the dead: stones, rivers, trees and the like.

Marett's (1914: 10) explanation requires that primordial people attribute personality to inanimate objects, those which inspire fear or awe, and leads to an account of preanimistic religion. What Marett describes under the heading of preanimistic religion, and also calls *animatism,* is, in his view and mine, a much more fundamental and primitive stage of thought – one might say *pre-thought* – than the idea of a soul which survives death.

Tylor does not distinguish animatism from animism proper, by which latter Marett means the attribution of not merely personality but also soul or spirit to a non-human object (1914: 14). Marett emphasizes the psychological primitiveness of animatism and the consequence that it must be chronologically prior to animism, but does not explicitly draw the conclusion that the concept of soul must be later than animatism. That conclusion would appear to be at variance with what he says (1914: 9) about the derivation of the spirits of other objects from souls.

The two can be reconciled, however. I suspect Marett could agree with the following summary. Animatism, the attribution of personality to non-human objects, was indeed prior, original and independent of the concept of soul. Later, people began to have a concept of soul based on the dream-image or trance-image, in the way explained by Tylor. Eventually, they came to apply some of the attributes of soul, for example, its ghostly appearance and its seeming ability to locate independently of its host object, to the spirit beings or daemons which they already associated with non-human objects such as trees, caves and rivers. In this manner, animatism was transformed into animism proper.

There is a tendency for animism to supersede animatism. That is, in people's thinking about supernatural beings, the personality attributed to certain objects and phenomena becomes assimilated to the soul-like spirit believed to be associated with human beings and animals. Eventually, among a given people, animism may completely subsume a prior animatism. For example, animism has taken over from animatism in a case such as the following: when a Banks Islander sees little stones round a large stone, he says that there is a spirit *inside it* and it can promote fecundity among humans and animals (Marett 1914: 13, 18).

When I refer to a tendency for animism to supersede animatism, I mean that, time and again in prehistory, once the concept of soul had gained currency in the intellectual or mythological repertoire of a people, at some point an individual made the leap from attributing souls to humans and animals to attributing soul-like spirits also to certain inanimate phenomena. Thereby he or she, perhaps when telling a story, would have an explanation of the naturalness of treating such phenomena as beings to which one can relate. A variety of ideas about souls and spirit beings may have been entertained by people in prehistory, but individuals telling their stories will

sometimes have extended the application of single explanations where possible, thereby imposing what Marett called 'uniformity of doctrinal expression' (1914: 13, 19, 27). Instance by instance, perhaps, animism will have taken over from animatism. For this reason, we should expect the number of instances of pure animatism among recent primitive peoples to be few.

Schofield (1944: 60) is one of the few writers to distinguish animatism (an object 'has a life of its own') from animism (an object is 'inhabited by a spirit'), and says the former is a characteristic belief of ancient Semitic nomads. As is illustrated by his example of the Semites, animatism can coexist with animism.

Tylor regards the concept of soul, and the principle of animism, that other creatures and objects may have souls, as the seed which gave rise to all religion (Tylor 1924, I: 426; Lowie 1948: 117). I do not follow him in this, as I believe that other factors were at work. One was animatism, as mentioned above. However, *soul* is clearly a foundational concept, without which religion could not have taken the forms which it now manifests in the most widespread world religions or in tribal religions as they are known to us.

Dating the concept of soul

From the foregoing section, I can explicitly claim that the idea of soul is later than the idea of spirit beings or daemons. A daemon is merely a more or less conscious personality attributed to a non-human object, place or natural process. The daemon does not inhabit the object. It is rather merely the personality of the object, or the object envisaged as having some sort of awareness and will. Soul is more than this: it is a self which inhabits and thereby animates a human or animal body, and is expected possibly to be independent of the body when the latter is alive, and possibly to survive the destruction of the body.

The idea of soul is evidently much more developed than the basic idea of daemon, and must, I think, be the product of contemplation, however dim. The contemplation of dream and trance images and the observation of the difference between a live and a dead body, as described at the beginning of this chapter, is one way by which the idea could have come into being. In this respect, I think Tylor was probably correct, and that he has given us the origin of the idea of soul.

Lang observes that we do not know the nature of the mentality of our ancestors at a pre-religious stage. The question is whether they too were susceptible to dreams and hallucinations in which they might see phantoms of distant or dead people (Lang 1898: 60ff).

Tylor suggests that susceptibility to hallucination and visions is more prevalent among modern primitives than among civilized people (1924, I: 446). Death, dreams and visions figure strongly in the life of tribal people (Lowie 1948: 108). However, as Lang points out, we cannot presume that there were no 'psychical differences between modern primitives and the datelessly distant founders of the belief in souls'. Yet we have no reason to believe that prehistoric people living at a similar level of material subsistence lacked the mental abilities and characteristics of recent tribal people. It makes sense to date the 'datelessly distant founders' to a time when hominins were sufficiently evolved and accomplished to have reached a material level equivalent to that of recent hunter-gatherers. Then it is reasonable to presume that, sharing a similar lifestyle, they may have shared a similar mentality. The Tylorian theory depends on people having some susceptibility to dreams and visions. Among the latter I would include out-of-the-body experiences. It is not necessary that they should have had dreams and visions with any great frequency, but only that those experiences should have occurred from time to time and on some occasions have been memorable. It further demands that people observe life and death and, to some dim extent, think about things.

Contemplation of an order sufficient to generate the idea of soul one would hesitate to attribute to an australopithecine or to *Homo erectus.* I think probably we have to look to *Homo sapiens* as the first hominid to have this notion. It may therefore date from the early Upper Palaeolithic, conceivably the Middle Palaeolithic, when hunter-gatherer societies comparable with some of those of recent centuries had appeared (Brace and Montagu 1977). Further developments of animism as described by Tylor, including the conception that animals have souls, probably took place during the twenty or thirty millennia of the Upper Palaeolithic, long ages in which perhaps old men and women had the leisure round the evening camp fire to contemplate their condition, generate ideas to explain it and communicate their ideas to others.

CHAPTER 9

ANOTHER WORLD: LIFE AFTER DEATH

The purpose of this chapter and the next is to explore the possible origins of the idea that there is a world or mode of existence besides the everyday physical world. Examples of the other world are the abode of the dead, the underworld, the dreamtime, the world as encountered in ecstatic states, and in particular heaven, as an enraptured state entered upon after death. While Chapter 8 considered the point of view of the living in thinking about ghosts, this chapter considers the point of view of the prospective deceased.

I think I have fairly fully elaborated the hypotheses of natural origins for the ideas of spirit beings and of souls. To do equal justice to the origin of the conception of heaven would require at least one full dissertation in itself. While the others almost certainly originated in prehistory, this conception is one which, I suspect, straddles the boundary of prehistory and antiquity. More variables are involved, wider scholarship required, and a much fuller treatment deserved. My view is that the ultimate origin of the idea of heaven is to be found in a prehistoric shamanism, but that the processes of development are difficult to evidence adequately. This is largely because, unlike prehistory, antiquity has left a vast body of material from which a vast body of scholarship has been generated, too much to sift through in present circumstances. I am also aware that I have concentrated on accessible information mainly covering the ancient Middle East and primitive Eurasia and the Americas, to the neglect of Africa, China and other Far Eastern civilizations. However, as the afterlife is a major element of religion it should not be neglected, and a limited exploration and hypothesis is better than none.

I shall begin by looking at ideas concerning the location and circumstances in which spirits of the dead have been believed to survive. In this chapter I feel free to use the words 'spirit' and 'soul' more or less interchangeably.

The afterlife

The idea that a person 'goes to heaven' after death seems to be a late one, on the evolutionary timescale which I have been considering. It may even be a conception of historical antiquity: that is, of the last three millennia before the

common era. By 'heaven' I mean a realm of happiness, even bliss, located variously in or above the sky or in a distant land on earth, usually the far west, into which souls enter after death. The conception of heaven seems to depend upon developments in astronomy and ethics, as well as on other factors. For the conception of a heaven as literally a celestial realm, it was necessary to have some ideas about the nature of the celestial bodies, sun, moon and stars. For the conception of heaven as a blissful state in which the just received their reward, it was necessary to have definite ideas about goodness and justice. However, it was not necessary that ideas about the nature of the heavenly bodies be astronomically correct, and the earliest evidence shows that no connection was seen to be required between living a good or innocuous life on earth and attaining a *post-mortem* reward. The state of bliss and rapture is part of the fully developed idea of heaven, as found in Christianity for example, but is, I think, distinct from some early conceptions even of a celestial afterlife.

Discovery of what ancient people believed is complicated by human factors. Ancient writers do not necessarily transmit the conceptions held by ordinary people of their era, but rather their own speculations. People in different countries and at different levels of society may hold contemporaneously diverse ideas, some of which may be relics of very ancient beliefs, while others may be more recent. And human beings seem always to have had a contrary ability to maintain contrary ideas with equanimity, for example of the dead resting in the grave at the same time as enjoying felicity in heaven.[1] It is not always possible to determine from concrete dating evidence which beliefs were early and which late, because of the jumble of beliefs reported for any given people over a given era. In some measure, one is guided by internal evidence, namely, the degree of sophistication incorporated into a given conception. The latter procedure may seem to beg the question, but, as I shall try to show below, the attribution of temporal primitiveness to some conceptions is more plausible than that of others.

It is plausible that there is a temporal and developmental sequence of ideas about the destination of the spirit after death: the grave, an underworld, and finally a heaven.

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[1] As another example, Schilling (1989: 200) notes that in the Rig Veda the goddess of the dawn nurses a baby who is at one time hers alone and at another time both hers and her sister's.

The grave

In the preceding chapter I delineated what form personal survival may be presumed to have taken in the minds of prehistoric people when the conception of personal survival first took form at all. The personality of a human being was believed to leave the body at death, literally when the body finally expired. The spirit thus released might appear to other people, particularly in dreams. The question then arises: what is the usual habitation of the disembodied spirit when it is not appearing to living people?

I say 'the question arises'. I do not mean primarily that the question arose for prehistoric people, although I am sure it did. I mean that it arises for us, in thinking what form their conceptions of life after death are likely to have taken. For historical antiquity, it is possible to determine the actual thinking of ancient people on the subject by examining the documentary evidence which they left behind. We can follow the developments in their thinking by comparing what was written at one period and place with what was written in another time and place, as is done in Old Testament scholarship. However, prehistoric people, by definition, did not leave documentary evidence. Even so, I think it is possible to reconstruct the *likely* ideas, given what is known from historical antiquity and from recent preliterate societies, and building on what has been determined so far about the probable conception of the soul or spirit. At this point one is obliged to cast Evans-Pritchard's denunciation of the 'If I were a horse...' procedure to the winds.

The question arises in this form: what is the most likely or natural idea of the location of the spirit of the deceased? Consider first an unlikely idea. It is plainly improbable that, given no prior related conceptions, prehistoric people should think that the dead person's spirit went to the stars. Why should prehistoric people associate a disembodied soul with lights in the sky, without having any developed ideas about what the celestial lights actually were? The idea of an astral afterlife is described as early as the third-millennium Pyramid Texts in Egypt (Lesko 1989: 35), but here we are dealing with a civilization with established means of transmitting sophisticated ideas. The pre-literate societies in Europe which constructed stone circles and similar monuments also evidently had astronomical interests and knowledge, and it is possible that they could have had the notion of an afterlife

among the stars. But, again, these are societies which evidently, from the effort they invested in giving physical expression to their perceived relations with the celestial bodies or lights, already had theories about what they were. I wish to consider the earliest and least demanding conception of the destiny of the spirit after death.

The most likely conception is, I think, one requiring no further assumptions, knowledge or ideas about anything else: that the soul did not go away at all but stayed near the corpse. The spirit was believed to have come out of, or to be to some extent detached from, the corpse, since the latter was no longer breathing, but it need not have left the vicinity. Karsten (1935: 59) notes that 'to a primitive mind' (and, I would add, to a civilized mind) there is still something of the soul left in the dead body: it is not entirely 'lifeless'. The idea that the spirit remained near or associated with its dead body is consistent with the dependency of fear of the spirit on the strangeness of the corpse, as discussed in Chapter 8. Evidence from ancient cultures seems to show that, all over the world, this was indeed the most primitive idea of the location or fate of the spirit after death, when once the idea of spirit had been thought in the first place (Paton 1921: 35, 167, 172, 175, 205; Burland 1976: 44).

In early Egyptian thought, the spirit was imagined as separating from the body at death but as remaining associated with it. This association gave rise to the need for preservation of the body, so that the spirit, which depended upon it, might continue to exist. After death, to enable to the spirit to return and inhabit its body, a ceremony was conducted of 'making a man a *ba*'. If the body perished, the *ba* would also perish. The proper abode of the spirit was the body or mummy. The mummy was not expected to be revived by the *ba*, but was preserved to provide a habitation for it. At the same time, the *ba* was able to move around. Represented as a human-headed bird, it is sometimes pictured as hovering over the body. In one case it is shown perched nearby watching the proceedings at its own funeral (Paton 1921: 154-155, 163, 165-167). One is reminded of the classic out-of-the-body experience that sometimes occurs during surgery.

Paton (1921: 92-94, 102-103) proposes that, among some of the Indo-Europeans, the fate of the spirit was related to the mode of disposal of the body. If the corpse was exposed, then the spirit roamed widely or entered into animals such as birds or snakes. Notably, these are not herbivores but scavengers which would feed

on the flesh. In other words, it was consumption of the body that allowed the spirit, intimately associated with the body, to enter into such animals. If the body was buried, then the spirit remained in or near the body in the grave. If the body was displaced, the spirit would go with it. The reputed bones of Theseus were brought to Athens, presumably to secure his protective presence for the city. Having the body of an heroic Teuton king interred in the neighbourhood could bring good fortune to the living (*cf.* Vernant 1989: 173; MacCulloch 1948: 159).

A burial place or the location of a murder was where an encounter with a ghost was most to be expected, according to the ideas of such diverse people of antiquity as Greeks, Celts and Mesopotamians (Paton 1921: 7, 102, 205; MacCulloch 1948: 158-160).

In the Egyptian Old Kingdom, some nobles had tombs constructed in which the body was laid in a chamber below ground, with a passage leading to a mastaba built on the surface. Inside the mastaba the shaft communicated with a small room containing an image of the deceased, separated by a false door from a chapel where offerings could be left. In some cases a gap was left in the false door to allow the spirit to pass in and out (Spencer 1982: 55-63). Similarly, in both Greece and Italy there were prehistoric tombs in which a channel led from the grave to the surface, and libations of blood and other liquids were poured down the channel so as to reach the deceased.[1] In Greece, food was placed in and on graves. In Mesopotamia, it was the duty of descendants to pour out libations on graves. In China, where the cult of ancestors reached a level without parallel elsewhere, the grave has always been a site for offerings and prayers for the favour of the deceased. The cults of the Hebrew patriarchs were carried on at their presumed burial places. In Egypt, letters to the dead requesting favours were left at tombs (Paton 1921: 35, 40, 72-73, 140, 160, 184, 225, 238, 261; Lesko 1989: 49; Vernant 1989: 177). Even in the mid twentieth century, in a remote area of Siberia, Diószegi (1968: 80) observed graves furnished with low, wooden, gabled roofs, having rectangular openings in the gable end

[1] It was formerly held that similar installations for pouring libations into vessels in tombs existed at Ugarit. However, tombs there were located under dwellings. It has been shown that the conduits in question do not connect with the tombs but served for drainage, and in the case of one building for transferring olive oil from presses above (Pitard 1994). Pitard adds (1994: 36) that these discoveries do not resolve the issue whether offerings to the dead were made at Ugarit.

through which food had been placed over the grave. Clearly in these cases it was assumed that some remnant of the consciousness of the deceased inhabited the grave.

The underworld

An underworld or nether world is a dark cavern under the earth, to which the souls of the dead make their way and in which they remain endlessly as shades. The notion of a nether world appears to be an imaginative extrapolation from the individual grave or tomb. It is as if the ancients imagined that graves, being subterraneous, were connected, or that the spaces of soil and rock between them were traversable by the spirits, so that they could find their way down to lower hollows, and that the whole formed a vast underground cavern or tomb complex as a habitation for the shades (*cf.* Paton 1921: 102, 105, 216, 218; MacCulloch 1948: 80-81).

The notion of an underworld already appears at the beginning of history with the Sumerians, who, according to Paton, had already 'outgrown' the simpler idea that the dead inhabited their individual burial places. The conception of a nether world was passed on to the Semitic successors of the Sumerians in Mesopotamia, and from the Babylonians to the Canaanites and Hebrews. The Akkadian term for the nether world, *Aralû,* is equivalent to the more widely known Hebrew term *Sheôl.* The Arabs in antiquity did not have the idea of a nether world, which indicates that it did not form part of the early Semitic world-view. The distinction between grave and underworld is not always made. For the Babylonians, ghosts emerged from the grave or Aralu interchangeably, and people were eaten by worms in Aralu (Paton 1921: 207, 215, 218, 243).

The underworld, as documented in ancient sources from the Mediterranean and the Middle East and in the Indian Vedas was imagined as dark and dusty, and the shades who inhabited it were attenuated in form and reduced in capacities. While the shades retain some degree of consciousness, it seems to be imagined as almost emotionless, without acute suffering, except that the shades harbour resentment of those still living. The shades grope feebly about in the darkness (*e.g.,* Isaiah 59: 10), and the words 'twittering', 'gibbering' and 'whispering' are used in reference to their voiceless utterances. Generally, the future life below is pictured as dreary, miserable and valueless (Wright 2000: 29, 31, 42, 50, 85-86, 113; Baillie 1934: 69-83; Paton

1921: 5, 8-9, 221, 238, 242, 245, 272; Cohn 1993: 75; Gnoli 1989: 125). Famously, Achilles tells Odysseus that he would rather be a labourer in the land of the living than reign over all the dead (*Odyssey* 11: 489-491). In Israel the mainstream Judaic religion, which disapproved of worship of the dead, emphasised the powerlessness of the inhabitants of Sheol (Baillie 1934: 73; Paton 1921: 233-234).

It appears that at first the nether world was conceived as the common destiny of all. The mighty descended there along with those who had been weak and unfortunate in life. To some degree, within the limitations of these shadowy circumstances, social structures were thought to continue beyond death, at least among the Sumerians and Semites, and the Chinese. On the other hand, the Old Testament makes more of the communally miserable existence of the dead in Sheol than of distinctions between them (Wright 2000: 31, 42, 97, 113; Paton 1921: 20, 215, 220-221, 245; Cohn 1993: 75).

Elysium

Later speculation seems to have introduced the notion that not all the dead shared the same fate. In all but the latest books of the Old Testament, Sheol is the final destination of every human being. However, the prophets Enoch and Elijah are reported as being taken up by God, as were a few Babylonian heroes. There seems to have been a Sumerian paradise, the land of Dilmun, located on earth but reserved for gods and heroes. Similarly, in Greek and Teutonic myth there is an alternative destiny for heroes: in Elysium[1] or Valhalla, heroes enjoy the afterlife in the company of the gods. Pre-Zoroastrian Iranian myth has a similar paradise for the aristocratic warrior and priestly classes, but the rest are consigned to a subterranean kingdom. The Vedas also assert that nobles are taken up to enjoy the company of Varuna and the other gods, while commoners suffer the descent to the underworld. The joyous version of the hereafter may be a reward: not, however, for living blamelessly or doing good to others, but rather for being born noble and conducting oneself bravely (Paton 1921: 109-112, 244; Cohn 1993: 76; Gnoli 1989: 125; Boyce 1975: 83-84, 110-111; MacCulloch 1948: 124, 155, 160-163).

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[1] Elysium is absent from the *Iliad,* and the Elysian Field first appears in *Odyssey* 4: 563-564, where Proteus narrates that the Greek heroes were transported there without dying.

The origin of this idea of different fates according to one's social standing may lie in metaphysical speculation by religious specialists, but I suspect that the principal motivation for it may have been more prosaic. From all parts of the world, epics and much other ancient literature were produced by poets for the entertainment of the nobility in their societies, not for the common people (Cohn 1993: 75). Nobles and the powerful and wealthy were no doubt accustomed to flattery by subordinates and entertainers. Over hundreds of years, with increasing sophistication and the recollection of what had been said in previous generations, poets would be under pressure to exaggerate their flattery to an extreme degree in an effort to outdo their predecessors and satisfy their patron's vanity. Eventually the noble ruler would be compared to a divine being. In historical societies, the divinization of emperors in their lifetimes is observed from Rome to Kyoto. The future life of nobles in Greek and Teutonic myth seems not to be blissful and other-worldly in a mystical sense, but rather like an exaggeration of the more enjoyable aspects of wealthy life on earth, with feasting and good company. In Valhalla the warriors fight and maim each other daily but their wounds heal again in time for the feast (MacCulloch 1948: 162). There is not much of the numinous about this afterlife.

Mixed afterlives from Egypt

In Egypt, the king, as befitted a god, expected to pass at death into the company of heavenly beings. The abode of the blessed dead was *Earu,* the Field of Rushes, which is variously placed in the underworld, in a faraway country on earth or even in the sky. The Field of Rushes was evidently a counterpart of the fertile Nile Delta with its fields of reeds, where, in legend, the dismembered body of Osiris had been reassembled (Budge 1899: 211). This was perhaps a paradise suited to an agricultural society, and it was expected that the blessed would continue to live there like royalty (Wright 2000: 22). On the other hand, the widespread presence of *ushabti* figures in tombs indicates an expectation that manual labour would be required in the next world, work which the *ushabti* were intended to undertake instead (Lurker 1980: 125-126). It seems that the Field of Rushes was at one time an earthly alternative for commoners, in contrast to the celestial realm reserved for Pharaoh and the gods, and perhaps only later was the former located in the sky

(Wright 2000: 24; Frankfort 1948: 110). However, Lesko (1989: 49) suggests that the sky was the original location of the Field of Rushes.

The solar theology of the priests at Heliopolis emphasized the celestial nature of the blessed afterlife, whereby the blessed dead would traverse the sky by day in the solar boat, and pass in it by night through the underworld, to emerge in the east next morning. In this conception the underworld was the habitation of the less than blessed dead. The strictly incompatible Osirian theology, at one time centred on Abydos, emphasized rather the underworld itself, which was the realm of the dying god Osiris. On this doctrine, the dead were identified with and addressed as Osiris (Wright 2000: 19-24; Paton 1921: 170, 173-175; Cohn 1993: 28). During the earthly daytime, the inhabitants of the underworld, gods and former humans, were inert, pending the next traversal of the sun from west to east under the earth, which would revivify them (Spencer 1982: 154).

In the third millennium BCE it appears that only Pharaoh was expected to attain to a blessed afterlife. As a god himself, he was worthy to be translated to heaven, which was a glorious realm, filled with the splendour of the sun god (Mercer 1949: 326). In the course of the Middle Kingdom, a blessed immortality in one form or another, whether in the Field of Rushes or among the stars – or both – became accessible first to nobles and then to lesser people, so that by the first millennium it was the aspiration of all ordinary Egyptians (Paton 1921: 174; Wright 2000: 24).

An ancient Egyptian possessed a variety of components of the self which survived death. According to Mercer (1949: 315-316), the *ka* came into being along with the person. It was imperishable in heaven, and at death the individual's soul, *ba*, went to his *ka*. At the same time, the *ba* and *ka* were kept alive by offerings at the tomb. The *ba* was a bird-like form which could leave the tomb and visit heaven to be with its *ka,* but returned at night to inhabit the mummy (Spencer 1982: 58-62; Lurker 1980: 73). The *ahu* (*akhu, khu*) was a spiritualized body, identical with the *ka* in heaven (Mercer 1949: 322-323). Frankfort (1948: 100-101) tells us that the *akhu* were transfigured spirits, which departed to become stars. They passed to a realm beyond human understanding: hence there was reticence about detailing their nature.

In the middle of the third millennium BCE, the solar theology forms the basis of the Pyramid Texts, but even these contain elements of the heterogeneous Osirian

theology, incorporated by the Heliopolitan priests because of the popularity of Osirian doctrines (Mercer 1949: 327-328). For the next two thousand years, concepts from both were juxtaposed and only incompletely reconciled in mortuary literature and inscriptions. Throughout this period, the primitive surmise that the spirit of the dead remained in the tomb evidently continued side by side with more sophisticated doctrines. The immense funerary preparations conducted by the Egyptians of all eras testify to the importance of the corpse, whatever the ideal destiny of the soul or other surviving components. After death one went to the stars, the Field of Rushes, the underworld or stayed in the tomb, or all at once. Adherence to a diversity of contrary doctrines of no mean sophistication apparently did not disturb the Egyptians (Frankfort 1948: 19, 91; Wright 2000: 22-24; Lesko 1989: 59).

Given the duration of Egyptian civilization, it is not surprising that there should be developments and a variety and syncretism of ideas. The various souls, doubles and other components of the self appear to be speculative extrapolations of simpler conceptions of soul, perhaps first formulated in different religious centres and later combined on the principle that each might embody some aspect of what happened after death. It is to be expected that spells from incompatible doctrines should be juxtaposed in funerary inscriptions, since understandably the deceased would have wished to maximize his chance of backing the winning theology (Paton 1921: 174; Lesko 1989: 49).

In view of the complexity uncovered by specialist scholars and the vastness of the literature, there is little I can usefully say about the possible origins and dating of the various doctrines developed by the ancient Egyptians. In any case, the recorded eschatologies are clearly the product of sustained and communicated thought, in contrast to the primitive conception of mere continued 'life' in the tomb. The latter owes more to an almost visceral *feeling* about the dead body (*cf.* Marett 1914: 23-24) than to any attempt at doctrine.

Absence of heaven

Among societies of the Middle East, the absence of a blessed afterlife can be traced. By 'blessed afterlife' I mean a survival in a happy condition, without suffering or diminution of one's faculties. Survival in the grave and in an underworld are forms of afterlife but not a blessed condition. A blessed afterlife seems to take the

form of Elysium or heaven. Elysium, whatever name it may appear under, is a paradise reserved to an élite, and may be located on earth. The much more interesting *heaven* is a world or state of being whose inhabitants enjoy perpetual bliss. It may or may not be differentiated from the sky as such, but its location is generally somewhere in or above the sky or beyond the normally accessible universe. It is the abode of the gods or of God; and it may be accessible to all humans given some preconditions of right conduct or initiation.

Wright (2000: 29-31) states that the Sumerians had no idea of heaven being accessible to human beings. Heaven was only for the gods, and humans were destined for the underworld. The land of Dilmun is a sort of paradise, somewhere on earth, for superhuman heroes. Yet the lament even for a good king, Ur-Nammu, of the late third millennium, expects him to go down to the underworld, where he will no longer know his family.

The Assyrian and Babylonian successors of the Sumerians perpetuated the belief that heaven was reserved for the gods and could not be attained by humans (Wright 2000: 42, 49-50). The pre-exilic prophetic religion of the Israelites lacks expectation of a blessed life after death (Paton 1921: 275, 280, 286; Wright 2000: 86).

It seems probable that the Greeks of the pre-classical period shared the widespread belief in an underworld as the habitation of all the dead. Even the aristocratic Patroclus becomes an insubstantial shade and passes below to Hades (*Iliad* 23: 71-76, 100-104). While there are later literary legends about the translation of human beings to Olympus, for example the rapture of Ganymede by Zeus, in the *Iliad* there is no evidence of any general expectation of attaining to a blessed afterlife in the company of the gods (Wright 2000: 113).

It is a matter of significance that there were literate societies in antiquity which lacked the conception of a blessed afterlife, even of the Elysian version, let alone of heaven. This fact should encourage attempts to trace the spread of the idea from one society to another, and to trace centres where it may have originated.

The sky

At an early date in China the idea is found that the souls of the dead are 'in the sky'. It seems unlikely that this was a popular belief, given the importance of the grave in ancestor-worship. Confucian writings contain speculation that the soul leaves the body and 'manifests itself on high as a shining light' (Paton 1921: 37-38).

In the ancient Middle East and indeed in Asiatic shamanism, the world was commonly imagined as having three levels: sky, earth and underworld. Excluding events likely to be witnessed only rarely such as earthquakes and volcanic eruptions, the sky is the scene of much the most impressive natural phenomena: daylight, the sun, the moon, a starfield, storms, lightning and thunder. It is perhaps not surprising that gods in general, if not the genii or gods of particular earthly locations, were believed to have their abode there. Sometimes in the ancient Middle East the stars were imagined as gods or at least as sentient beings. In the Old Testament several passages refer to the worship of the sun, moon and constellations by Israel, in which they appear to be identified with the 'heavenly host' (Wright 2000: 46, 54, 58-59, 96).

A hope of ascending to join the celestial beings was entertained in Egypt as early as the third millennium BCE, although it was limited to the Pharaoh. Later, in the Coffin Texts and the Book of the Dead, the deceased is conjured to identify himself or herself with a star or constellation (Wright 2000: 8-10).

While acknowledging an alternative hypothesis that the idea of paradise originated with the Sumerians, Wright (2000: 30, 51) points out that a comparable idea arose in Egyptian thought at least as early as in Mesopotamia, and concludes that the notion of deceased human beings being admitted to join the gods and stars in the sky, or 'heaven', was an Egyptian invention. The belief in the celestial destiny of the soul known as *akhu* seems to be ancient and, unlike some versions of the afterlife, was not historically restricted to the Pharaoh (Frankfort 1948: 102).

Another world

Heaven

By 'heaven' I mean a place or state of ecstatic excitement, joy, rapture or bliss enjoyed by the blessed dead. It can be attained either by a disembodied soul or

by a resurrected body. A genuine heaven is, I think, more 'other-worldly' than the paradise of Valhalla and perhaps Elysium. There has to be an element of religious awe, toward the mystical end of the spectrum of Otto's *numinous*. At its most extreme in Christianity, the blessed in such a heaven experience the beatific vision.

The Vedic paradise for the aristocratic class, while retaining its Elysian character, has some elements of the blissful state. On a supramundane scale its once-human inhabitants enjoy the mundane pleasures of making love and music and of feasting, this time in the company of the gods. However, we are told that, at death, the spirit makes its way to heaven, and is there reunited with its body, which is transformed into a glorious body. Varuna gathers the noble humans about him and they enjoy endless felicity. Heaven is blissful, full of radiance and filled with song (Paton 1921: 108; Cohn 1993: 76; Boyce 1975: 198).

It seems to be with Zoroastrianism that heaven in the fullest sense first comes into prominence. Here, however, it is not a question of the soul of the departed making its way at death to heaven and enjoying eternal felicity. Rather, at the end of time, the Bounteous Immortals, gods brought into being by the Creator, Ahura Mazda, will finally vanquish Angra Mainyu and the forces of evil, against which the good creation has struggled since the beginning of the cosmos. Ahura Mazda himself will celebrate a final sacrifice, in which all the righteous will participate. The bodies of the righteous will be transformed into glorious bodies, and they will live for ever in peace and joy with their Creator and his Bounteous Immortals in an unchanging kingdom. Thus will the 'making wonderful' be accomplished. After an encounter with the anthropomorphic pleasures enjoyed by the denizens of Valhalla and the incomplete pictures of life with the stars from Egypt, the Zoroastrian doctrine comes over as startlingly more grand. This is genuine heaven. There is an other-worldly, numinous, awe-inspiring quality about the prospect which unfolds.[1] Moreover, this heaven is not the preserve of aristocrats but is open to everyone who will have faith (Cohn 1993: 98-99; Boyce 1993: 206, 251, 261).

While a classical legend gives the date 258 years before Alexander the Great, Boyce places the prophet Zoroaster at between 1400 and 1000 BCE, and the location

[1] The vocabulary used by sympathetic scholars to describe the Zoroastrian doctrine may of course have something to do with this.

of his life's work as Central Asia, just before his people, the proto-Iranians, migrated into north-eastern Iran. From there Zoroastrian doctrine spread throughout Iran, and became more widely known throughout the Middle East and in the eastern Mediterranean with the expansion of the Persian Empire under Cyrus the Great in the sixth century BCE (Boyce 1975: 3, 190; Cohn 1993: 102).

After 400 BCE, Plato expounds the doctrine that we possess an immortal soul, which at death is able to leave the body and engage blissfully in the unchanging world of forms or ideas (McDannell and Lang 1988: 16; Wright 2000: 100). The theory of ideas is due to Plato, but the conception of an immortal soul which can aspire to bliss after death seems to replicate Pythagorean teachings of the sixth century BCE. According to that doctrine, after death the soul reunites with a 'universal soul' in heaven. Assigning the priority of these similar conceptions to either Greeks or Iranians is problematical (Wright 2000: 100, 108).

While bliss is the ultimate destiny of the soul in the Platonic and Zoroastrian conceptions, it appears to me there is a fundamental difference. For Plato, the soul existed before birth in heaven and returns there immediately after death, glad to escape from the body, which is evil. In Zoroastrian doctrine the dead await resurrection of the body, which is good, to enter upon a glorious destiny at the end of the age.[1] This is in keeping with the novel view of history and eschatology introduced apparently by Zoroaster himself, of time tending toward a purpose and conclusion, in contrast to the conception of time as unchanging common to the ancient world (Boyce 1975: 233; Cohn 1993: 99).

The once widespread view that ancient Near Eastern societies other than the Israelites regarded time as cyclic or repetitive is no longer tenable. The concept of world cycles was unknown to the Babylonians and may be due to the classical Greeks, specifically the Pythagoreans (Wyatt 2001: 304-305, 325; Lambert 1976: 172). For the Babylonians, Assyrians and other Near Eastern peoples, as well as Israel, it appears that history was conceived as a linear succession of events in which God or the gods took a hand in directing outcomes (Albrektson 1967; Drews 1975: 39-50). The novelty, if it is such, of the Zoroastrian conception is the emphasis on

[1] In Judaism and Christianity the attempt to combine instant immortality on the Hellenistic model with resurrection has always been problematic (*cf.* Paton 1921: 285-288).

the end of time, and the relocation of great cosmic events, such as the combat in which good triumphs over evil, from the mythical past to the prophesied future.

The soul which leaves the body after death according to the primitive worldwide conception is immortal in the trivial sense that it survives death. The novelty of the Platonic and Zoroastrian doctrines is that the soul is deemed to have a glorious destiny and not merely to be a ghost or shade.

As discussed in Chapter 8, it is understandable that people should believe there is a spirit which leaves the body at death. As discussed in this chapter, it is understandable that people should think the spirit lingers near the body and inhabits the grave if the body is buried. It is even understandable that the spirit should be thought to inhabit an underworld, which is a sort of generalized grave complex. But why should anyone think (1) that the spirit goes to the sky, (2) that the spirit enters upon an enraptured state?

The idea of an ascent to the sky has been connected with the practices of exposure and cremation. In particular, among the Indo-Iranians, only nobles were cremated, and heaven was reserved for them (Boyce 1975: 110-113).[1] In exposure, especially if the corpse is elevated off the ground on a trestle, the spirit may be thought to have access to the atmosphere and to be able to fly upward. In cremation, the spirit, as a vaporous entity itself, may ascend with the smoke.[2] I think these are plausible sources of the belief in ascent to the sky. Certainly, neither exposure nor cremation would encourage a notion that the soul descends to an underworld. At the same time, whether or not given societies practised cremation or exposure, there may have been other phenomena which could give rise to the belief in ascent, as I shall suggest later.

There remains the ecstatic, blissful state. Afterlife in the grave or underworld is the reverse of blissful or exciting. Consider the Egyptians, who Wright (2000: 51) thinks were the first to expect a celestial afterlife. Even the hope of dwelling in the Field of Rushes did not make them wish any less for a long natural life or perhaps fully dispel the view of death as a disaster. The enormous precautions of tombs, mummification, amulets and reduplicated spells commissioned to secure an

[1] Yet in Homer heroes (not commoners) are burnt on a pyre but descend to the underworld.
[2] *Cf.* Brihadāranyaka Upanishad V.x; Chāndogya Upanishad V.x.3, 5 (Zaehner 1966: 77, 100).

agreeable afterlife indicate anything but a 'sure and certain hope'. For me, there is a note of desperation in some appeals which plainly run counter to observation: for example, 'O king, you have not departed dead but have departed alive!' (Wright 2000: 19). If one must die, the wish to participate in the apparently unchanging round of the stars, away from the cares of this world, is understandable. It appears to be wishful thinking carried to an extreme. Even Pharaoh must have wondered whether the flattery of the priests and courtiers, to the effect that he was a god and would blissfully join the sun in heaven, could possibly be true.

Experience of a heavenly state in this life

Flattery, wishful thinking and speculation seem insufficient to generate the idea of a heavenly afterlife. Once the idea of an enraptured state of being had come into circulation, then flattery would attribute the possibility of attaining it to those in authority on earth, and ethical speculation might allow it also to the righteous. But what could give rise in the first place to the idea that an enraptured state was possible?

More than speculation and wishing, what would be convincing as a starting point is *experience.* I think it is in the experience of an enraptured state by certain individuals and then the testimony of those individuals to others that one should identify the origin of a general belief in its possibility. Here, by 'experience of an enraptured state' I mean experience in this life: experience which can be described to others and the means to attain which can sometimes be offered by an experient to others. The attribution of this state to a *post-mortem* existence is, I think, the result of speculation and wishful thinking. Once its attainability in this life has been conceived, because it is reported by some experients, then its attainability after death becomes also conceivable, given a preexistent belief that the personality survives death in some form anyway.

The fulcrum of my argument has been anticipated by Baillie (1934).

Baillie notes the inadequacy of Plato's philosophical arguments for the existence of an immortal soul (*cf.* Cross and Woozley 1964: 119-120, 287-288). As does Moore (1931: 25), he concludes that Socrates' and Plato's convictions regarding a blessed personal immortality arose not from rational excogitation but

from the emotional pull of direct experience. The philosophical concept of an immortal soul was owed to Socrates, but Plato elaborated the idea from non-rational faiths in which it was already implicit. Specifically, it was from the experiential phenomena of the Eleusinian mysteries that the concept derived. In those mysteries the initiates temporarily experienced a higher kind of life. Doctrinally, the experience was interpreted as participation in the universal renewal of life, as epitomized by the return of Persephone from the underworld to her mother Demeter. Experientially, it was a blinding revelation, awe-inspiring and unforgettable. For the uninitiated, the afterlife would be only the shadowy existence of the underworld. For initiates, there would be real, blissful life after death, since the experience of the mystery was interpreted as 'a foretaste of what the individual was one day to enjoy as his own for ever'. The mysteries were accessible to everyone, including slaves. Unlike Elysium, therefore, the prospect of a blessed afterlife was open to all people in return only for purification and worship of Demeter (Baillie 1934: 83-85, 102-107, 112).

In the Orphic sects, devotional interest was overlaid by a strong doctrinal system, elaborated by the Pythagoreans. In the mythology of this doctrine, Dionysus was dismembered by the Titans, whom Zeus subsequently destroyed by fire. Each human being contains one of his fragments, which is the person's soul. In contrast, the body consists of matter originating from the ashes of the Titans. Being divine, the soul is immortal and capable of ultimate union with the divinity. Of significance for my purpose is the ecstatic state attained on occasions by worshippers of Dionysus, in which the soul appeared to be liberated from the body. This again could be interpreted as a foretaste of the future life (Baillie 1934: 108-110).

In a later section I discuss the probable events and content of the Eleusinian mysteries. I concentrate on Eleusis rather than Orphism because in the former case the reticence of ancient commentators has kept down the accretion of distracting mythology and philosophy, and because the essence of the mystery was a unique, once-in-a-lifetime experience, regarding the nature of which a credible theory has been put forward in recent decades.

Earlier I referred to the resurrection hoped for in Zoroastrianism. Baillie notes the earliest occurrences of the concept in Old Testament writing, specifically Isaiah 26: 19 and Daniel 12, which he dates to the third and second centuries BCE. Of pre-

Christian Jewish writings besides these, only 1 Enoch prophesies a glorious afterlife. While noting that an independent origin is possible, he points up the probability that the Judaic conception found in these post-exilic writings had its origin in Persian thought encountered by the Jews toward the end of and after the Exile (Baillie 1934: 129-130). Above I observed that for pre-exilic Judaism personal survival was a dismal affair in the underworld. The conception of bodily resurrection, in contrast to the idea of survival of a separable soul, is neither widespread nor easy to account for. That the same conception should originate independently among two religious groups in the Middle East at the same period of antiquity seems on the face of it most unlikely.

Cohn (1993: esp. 220-228) argues that the resurrection found in the late Jewish prophets is owed to Zoroastrian influence. When the Persians conquered the Babylonians, the majority of the Jews exiled in Mesopotamia chose to remain there instead of returning to Palestine as the new conquerors allowed. While previous and subsequent overlords, the Egyptians, Babylonians, Greeks and Romans, were reviled and their religions abominated by the Jews of the first millennium BCE, this is not the case for the Persians. Acquaintance with and respect for Persian beliefs was possible for Jews serving Persian households and institutions and participating in the urban life of the empire. The Persian doctrine of the end of the age, when oppression and evil would be finally overthrown, appealed to the Jews, with their history of oppression by foreign peoples. Sympathetic to the Zoroastrian doctrine, the Jews adapted its eschatology to their own history and condition.

Clear similarities are demonstrated between the Jewish conceptions of resurrection and afterlife and those of the Zoroastrianism of the Persian Empire. Additionally Cohn elucidates the similarities of the concepts of the Son of Man in Enoch and Daniel and those of the Essene and Christian messiah to the Zoroastrian doctrine of the *saoshyants,* the future saviours who are born from the seed of Zoroaster. He is able to attribute most of Judaeo-Christian apocalyptic to a combination of Zoroastrian expectations with the ancient combat myth found in many cultures, as exemplified by the Babylonian story of Marduk destroying the sea monster Tiamat and the Greek story of Zeus destroying the Titans. In the Zoroastrian world view, the great combat is relocated from a past mythical era to the

ecshatological future. One observes that the outcome of the combat is correspondingly more grand. In the ancient story, the defeat of the monsters brought about the end of chaos and ushered in the present age of order and normality; in Zoroastrian and Judaeo-Christian prophecy, the defeat of evil will bring about the end of mere normality and inaugurate an unending era of bliss and glory.

It seems probable that the blissful afterlife, alien to pre-exilic and much of post-exilic Judaism but promised by Pharisaic Judaism and elaborated and spread by Christianity, is in the end derived from Zoroastrian doctrine. The question arises: where did the Zoroastrians get their idea of a blissful afterlife? As with the Platonic or Pythagorean doctrine, the core and motivation of the belief must lie, I think, not in theory but in an other-worldly experience. In Chapter 10 I present an hypothesis about the nature of this experience.

Of countries whose history is easily accessible to western scholars, the remaining location where an idea of a heavenly blissful afterlife has been encountered is Egypt. Its occurrence there seems to be independent of and probably earlier than its origin in Persia. For Egypt also I take Baillie's view that an experience of some striking kind must lie at the core of the belief. In Chapter 10 I present evidence about the nature of that putative experience.

CHAPTER 10

ANOTHER WORLD: HEAVEN

Other-worldly experience

Enraptured states

At some stage of prehistory there was a time when there was no doctrine or tradition, and people or prehumans did not seek experiences for their religious significance, because there was no religion to give significance. Even so, there must still have occurred experiences of altered states of consciousness comparable to those of later times which have been regarded as religious. In remote prehistory people will have attained states of bliss, rapture or ecstasy in the absence of an interpretative framework to make sense of them.

There are various means whereby an overwhelming enraptured or blissful state may be attained. In earlier chapters I discussed neural phenomena, including auras associated particularly with temporal lobe epilepsy, which in a minority of cases include states of intense bliss and which occur spontaneously in some individuals. Near-death experiences often incorporate blissful states, which manifest common elements whatever the cultural content of the experience: the subject encounters either Christ or Krishna, for example, but both figures appear radiant and welcoming. Experiences which resemble the above subjectively can be induced deliberately: by meditation, controlled breathing and other physiological techniques which generally restrict the flow of oxygen to the brain, or by ingestion of intoxicating material. For origins, then, there are five possibilities: spontaneous epileptic or quasi-epileptic episodes, near-death experiences, meditation, physiological techniques and intoxication.

Neither blissful epileptic auras nor near-death experiences are common, but they do occur, and there is no reason to believe they did not occur in antiquity or prehistory. Those experiences would be uncontrolled: the epileptic variety spontaneous and the near-death variety occurring in unpredictable physiological trauma.

Meditation and breathing techniques, or a combination of the two, are the preferred methods of inducing a religious experience today in literate societies. But these are generally taught by an experienced practitioner. One does not meditate for the first time without having some idea what one is seeking. Either one has been told that some sort of experience is possible and something of what it should be like, or one has read about it, or one has experienced it spontaneously before. The same applies not just to contemplation but also to physical exercises such as overbreathing, shallow breathing, drumming, dancing or whirling. These activities in a religious context are alternative ways of seeking an experience about which one has prior knowledge or expectation (Harner 1973a: xii). One may whirl round without particular intention and end up in a mild altered state. Children do this, and an adult may have learned in childhood that a pleasant altered state can be induced (Weil 1998: 19, 24-25). However, the altered states induced by physical activity not specifically directed toward religious experience are likely to be of short duration and consist of either mere dizziness or, in a fortunate case, euphoria due to the release of endorphins. Sports players report such 'highs' without religious connotation. In prehistory and early antiquity, without a prior theory as to why one would undertake the exercise – that is, an expectation of what experience one would be seeking and how the technique or activity might bring it about – I should think those practices would rarely be undertaken. No doubt, however, at some time in prehistory, someone must have been the first to 'meditate', in some manner or other, without knowing what experience would supervene.

Consider a population with no prior tradition of inducing altered states of consciousness. It seems clear that the most likely occasion of an unanticipated first experience of a striking and memorable altered state is offered by the accidental ingestion of psychoactive plant material. The reason why it is the most likely means is that the experience could be precipitated in anyone, with or without specific neurological predispositions and with no effort, simply by eating something found in the environment.

Once that experience had been attained and repeated, practitioners would investigate other means of obtaining the ecstatic experience. This would be particularly the case if there were some change in circumstances which made the

original source of that experience inaccessible to a population, such as climate change, migration or captivity; the memory of it would remain. They would pursue those physiological avenues, such as altered breathing or rhythmic drumming, which had accompanied the experience when formerly induced by the intoxicant, or had been discovered inadvertently to produce similar results. It is reasonable to suppose that this is how the alternative techniques of ecstasy were developed, as Eliade proposes for India, where not only alternative techniques but also a whole religious philosophy grew up, ultimately based upon ecstatic experience but with vast elaborations unknown to the original practitioners (Eliade 1978: 212).

Eliade (1964: 414) had earlier raised the question, in respect of India, whether (1) the schemes of its religious philosophy are derived from conceptualizing the ecstatic experiences of a few, or (2) the ecstatic experiences come from an effort toward 'interiorization' of existing conceptual schemes. In his later (1978) view (1) is much more likely, and (1) makes far more sense to me.

In the rest of this chapter I shall present evidence for the following propositions.

- Plants containing psychoactive chemicals grow in most parts of the world. In the majority of cases they have been used by tribal people to induce altered states, and such experiences invariably form part of their religious tradition.
- A variety of altered states can be produced by intoxicants, and among those are some which with repeated experiences could induce a subject to believe that there is another world.
- The conceptions of another world in certain classical historical religious traditions are derived from experiences resulting from the consumption of psychoactive plant material. I specifically discuss the Greek mysteries, the Indo-Iranian and Zoroastrian tradition, and Egyptian religion.

Psychoactive plants

By 'psychoactive' I mean having the property of unilaterally altering the mood and perceptions of the subject. Various terms have been used in recent decades more or less as synonyms, perhaps the commonest being 'hallucinogenic' (producing hallucinations), 'psychotomimetic' (simulating psychosis), 'entheogenic' (causing the divine to enter the subject). Each of these terms embodies a value judgement

about the experiences produced. The words 'entheogen' and 'entheogenic', favoured by Wasson, Ruck and the Shulgins (*e.g.*, Shulgin and Shulgin 1997: 41; *cf.* Forte 1990: 1, 8) are particularly tendentious. Discussing the appropriateness or otherwise of these and other terms, Schultes and Hoffmann (1992: 12-13) conclude that no word is universally suitable, ironically in this and other passages all the while using the satisfactory value-neutral term 'psychoactive'.

Even such common food substances as coffee and tea are regarded as mildly psychoactive, in that the caffeine they contain is a stimulant. Alcohol is psychoactive, inducing euphoria at first, followed by depression or sleepiness. The latter effect enables alcohol to be classed as a narcotic, like tobacco (Schultes and Hoffmann 1992: 10-12). However, it is the more strongly psychoactive plants, those which produce striking and memorable alterations in perception and mood, and particularly those which are strictly hallucinogenic, that are of interest here. Tobacco as used by the natives of South and North America is included among these, because tribal people have traditionally consumed tobacco from species containing higher concentrations of toxic substances than commercial plantation tobacco, and in very large quantities (Von Gernet 1995; Wilbert 1972). From now on, I shall use the word 'psychoactive' and a synonym 'psychotropic' to refer only to substances having strongly mind–altering but not necessarily strictly hallucinogenic properties.

Every continent except Antarctica has its complement of plants containing psychoactive chemicals. These are found principally among the lowest orders, the fungi, and the highest, the most recently evolved flowering plants (Schultes and Hoffmann 1992: 16-19; Schultes 1972: 5-6). The reason why the extracts of some plants are psychoactive is that they contain alkaloids which in their composition and structure resemble the body's own neurotransmitters. Some alkaloids such as morphine, derived from the opium poppy, were isolated long before neurotransmitters were discovered (Furst 1990: xx). Alkaloids are alkaline substances containing nitrogen, and may possibly be waste products of processes occurring in certain plants. Why only some plants produce them is unknown (Hoffmann 1978: 25; Schultes and Hoffmann 1992: 20-22). The neurotransmission effects of these alkaloids presumably open pathways in the brain – that is, enhance or

activate circuits of neuron populations – which would normally remain suppressed or inactive.

While in drug-enforcement circles, especially in the United States, the word 'narcotic' is used to cover all kinds of psychoactive material, the effects of the various plants vary, and they can be classified accordingly. Intoxicants include the familiar alcohol. Stimulants include coca and its cocaine derivatives, and amphetamines. Euphoriants include cannabis and its derivatives, such as marijuana and hashish. Narcotics tend to be euphoriants also but induce sleep and dreaming; they include opium and its derivatives such as morphine and heroin, as well as tobacco. True hallucinogens, producing visionary experiences, include a variety of Old and New World fungi such as the Mexican magic mushroom *Psilocybe,* cacti such as Peyote, and the seeds and tissue of a large number of leguminous and flowering plants, such as morning-glory seeds, the vine *Banisteriopsis,* Syrian rue, henbane, belladonna and many others.

Here I list general effects of the types of drugs according to Huxley (1970). Intoxicants such as the alcohol of beer and wine produce euphoria, then incapacity and narcosis, the drunkenness well known in western culture. Stimulants such as amphetamines speed up the metabolism. Cocaine removes anxiety symptoms and increases vigour and wakefulness. Euphoriants such as cannabis create a feeling of well-being. Narcotics such as opium slow down physical activity and produce dreaming sleep, sometimes of fantastic scenes.

Huxley states that the hallucinogens produce 'inspired imagination'. Drugs used in religious contexts tend to be hallucinogens rather than narcotics. The South American *ayahuasca* or *yagé,* the concoction based on *Banisteriopsis*, generates surges of energy with terrifying and splendid visions, including sometimes the tearing apart of the subject by beasts of prey. The flowering *Datura* plant generates visions and a sense of power. The *Amanita* mushroom (fly agaric) produces 'startling visions'. The *Lophophora* cactus (Peyote) produces visions of fantastic, colourful landscapes and architecture with giant figures. The *Psilocybe* mushroom induces depersonalization, detachment of the self, which enables the subject to feel able to pass through things and enter other bodies. While narcotics alleviate anxiety, hallucinogens do not, hence the 'bad trip'. Hallucinogens separate the ego or sense of

self from the imagination, so that the experience seems to be imposed from outside and may include an attack on the self. In traditional cultures, the practitioner is trained to expect and accept the attack, and thereby to become stronger. The beasts of prey which tear a shaman apart in his initiation often also put him back together (Harner 1973b: 160-163; *cf.* Eliade 1964: 44, 56, 59, 486).

The above sketch, condensed from Huxley, is of course inadequate to express the range of experiences which subjects undergo, but it is consistent with a wide literature, including medical summaries (*e.g.*, Frude 1998: 186-197). Psychoactive substances are rarely wholly narcotic or wholly stimulating or wholly hallucinogenic, and effects may differ at various stages during the period of psychoactivity. Also, the effects depend significantly upon set and setting. *Set* is the expectation, attitude and belief system of the subject; *setting* is the physical surroundings and conditions – light or darkness, open or enclosed space, for example – in which the experience takes place (Devereux 1997: 45). The important point for my purpose is that among the experiences induced by narcotics and hallucinogens are some which appear to extend the subject's perceptions, enlarge the boundaries of his or her world, or enable travel to another realm of being interpreted as 'metaphysical realms', 'upper world', 'lower world', 'spirit world'. In some South American tribal societies the common term for the visionary experience literally is 'trip' (Harner 1973a: xii; Metzner 1999: 15-17).

The hallucinogenic 'tea' *ayahuasca* taken in the northern countries of South America has been said to produce similar experiences among both indigenous people and visitors from foreign cultures (Kensinger 1973: 12). Harner (1973b) describes five themes which commonly occur during the hallucinations: (1) release of the soul from the body, and a trip, often soaring into the air; (2) visions of snakes and jaguars; (3) visions of gods and demons; (4) seeing distant but real places and the people in them; (5) divination: for example, learning who committed a crime or bewitched a patient. Now that 'ayahuasca tourism' by western visitors exploiting the traditional practices of native peoples has developed (Metzner 1999: 38-40), the statistical analysis of the experiences of large numbers of subjects would be an obvious area for research. The proposition that specific drugs may produce specific experiences is interesting. For example, if it could be shown that, say, eating a certain type of

mushroom gave rise to hallucinations of fairies, then this would be the likely origin of the notion of fairies. However, I have not found any such correlation in the literature.

Psychoactive alkaloids have been isolated in the laboratory from many species traditionally used for mind-altering purposes. In most plants several distinct, but usually related, psychoactive substances are present. Equally, similar alkaloids may occur in plants of widely different types. Most of the mind-altering substances occurring in nature are found in plants, but some animals, including certain toads and caterpillars, contain hallucinogens. The toad *Bufo marinus* exudes a secretion containing the tryptamine alkaloid bufotenine, which is also found in beans of the tree *Anadenanthera.* These beans, containing further tryptamine alkaloids, are the source of a traditional hallucinatory snuff used by South American Indians (Schultes and Hoffmann 1992: 118; Emboden 1978: 395).

Human beings in tribal societies have shown ingenuity in means of consuming psychoactive material. It has been burnt in bowls and the fumes inhaled; smoked in pipes; snorted dry or snuffed up a pipe; blown by one person through a pipe into another's nostrils; chewed and swallowed; chewed by one person and expelled for swallowing by another; mashed and mixed with water or milk, then drunk cold, or boiled and allowed to cool and the mixture drunk; rubbed on a part of the body for absorption through the skin, even on the inward aspect of the eyelid; inserted as a rectal suppository, either manually by the subject or blown up through a pipe by a partner; or recovered in the urine of a primary intoxicated subject and drunk by another.

All over the world, plants containing psychoactive agents have been sought out by local people and employed in traditional religious or magical practices. The only peoples who have not been known to employ hallucinogens are the natives of Australia and New Zealand and the Eskimo, presumably owing to a scarcity of such plants in the regions they inhabit (Schultes and Hoffman 1992: 26).

It has been asserted that human beings are physiologically attracted to dreamlike or intoxicated states. At the very least, a dreamlike state offers a unique combination of relaxation and excitement without the danger of injury, unless from toxic agents consumed to procure that state. Evidence that intoxication is desired is

given by the almost universal attraction of alcohol.[1] Furst (1990: xix-xxi) cites psychopharmacological opinion that the desire for intoxication is an innate organic drive alongside those for personal survival and reproduction, and discusses the proposition that animals generally, including insects as well as mammals, are specially attracted to intoxicating plants. Writing originally in 1972, Weil (1998: *passim,* esp. 19, 21, 31) was the first to present the argument that the desire for altered states is an innate drive. He points out that sleeping, daydreaming, meditation, general anaesthesia, delirium and even being engrossed in entertainment as a spectator are all altered states of consciousness, different from normal waking attentiveness. People generally enjoy and wish to prolong and repeat at least some of those conditions.

Shamanic and prehistoric use of psychoactives

Eliade (1964) defines shamanism most concisely as 'techniques of ecstasy' (1964: 4) and describes its world-view and phenomena as found in Central Asia and Siberia. Shamanism of fundamentally the same form has been identified in the Arctic, North and South America, Australasia and Oceania, southern Asia and ancient Europe. The only continent from which shamanism seemed to be absent was Africa; but 'true' shamanism has been described from there also (La Barre 1972: 268).[2] In the same vein, Baldick (2000: 169) denies any dichotomy between African spirit-possession, in which the subject is under the control of a spirit (e.g, Nadel 1946), and Asiatic shamanism in which the subject may either be possessed by or command spirits. Eliade (1964: 4, 496, 500-502, 506) raises the question of Indian (Buddhist) and Middle Eastern influence in creating the Central Asian shamanic world-view. Yet while there may have been some transfer of 'Lamaist' ideas (Alexeev 1990), the presence of essentially similar beliefs and practices throughout northern Eurasia and pre-Columbian America demonstrates that the core shamanic complex is aboriginal.

Primitive elements of religion are not necessarily shamanic and the shamanic not necessarily primitive (Eliade 1964: 3-12). Shamanism has certain universal

[1] However, eastern Asiatic people, not including Siberians, generally display allergic reactions, flushing and sweating, to alcohol.
[2] La Barre cites Nadel (1946), to which Eliade also refers (1964: 26, 27), but Eliade does not commit to the presence of true shamanism in Africa.

characteristics, among which the principal one is that a state of trance or *ecstasy* is valued as the primary religious experience (Eliade 1964: 107). In such a state the shaman is believed to be able to leave his or her body and make a journey to the sky, the underworld or distant places, and in those places observe and converse with other beings, human, animal and supernatural. Further, in that state, the shaman, in the role of medicine man or woman, is able to heal patients because the causes of illness become visible. Generally shamans demonstrate a predisposition to the vocation in youth, but are usually also trained by older shamans in the techniques of achieving ecstasy and of what can be accomplished in that state (Furst 1994: 4-7). There has been some dispute in the literature about whether 'trance' means the same thing in all contexts. Here, following Eliade, I use it to refer generically to altered states of consciousness whose subjective components and objective circumstances are well documented in numerous works (*e.g.*, Furst 1990; 1994; and his references).

It will be observed that the core elements of shamanism do not include worship of gods, sacrifice, offerings or elaborate theology. Sacrifice is present in some forms of shamanism, for example in Central Asia (Alexeev 1990), but is not a *core* element (Hultkrantz 1978: 33, 37). What ritual there is serves induction of trance, not worship or celebration. It does involve an ontology of spirit beings, both souls of the dead and non-human supernaturals or *daemons,* including demons. It also, crucially for the present chapter, involves the existence of *other worlds,* other places or planes of existence, which can be reached by 'leaving the body' – that is, in an *altered state.*

It has been argued that a basic shamanism is the aboriginal religious complex or *Ur-Religion* of the whole of prehistoric Eurasia (La Barre 1972: 268-273, 278; 1970a: 387-432; *cf.* Eliade 1964: 502-504; Baldick 2000: 143) and that this formed part of a generalized Palaeolithic *Ur-Kultur* (Kluckhohn 1959: 271). Features of the cave art of Upper Palaeolithic western Europe, some of it dating as long as 31,000 years ago and continuing until about 13,000 years ago (Chauvet *et al.* 2001: 9-11, 122-123), are widely but not universally regarded as evidence of shamanic practices (Dickson 1990 and his references; Baldick 2000: 156).

La Barre (1972: 270-273, 278) proposes that this hunting and shamanistic cultural complex was carried by the proto-Amerindians at a Mesolithic stage of

material culture when they migrated from Siberia into Alaska toward the end of the last glaciation about 14,000 years ago, and spread by them over the western hemisphere. Hultkrantz (1978: 53) confirms the continuity of specific elements of shamanism from Eurasia to the Americas: the séance focused on a spirit lodge or shaking tent, the ecstatic journey and the great spirit who is master or mistress of the animals. La Barre (1970b; 1972) further argues that the proto-Amerindians, accustomed to the use of hallucinogens for religious purposes, were primed to seek out psychoactive plants in their new environment. This aspect of their originally homogeneous culture accounts for the wider and more intense religious use of hallucinogens, among pre-agriculturalists, in the Americas than in the Old World.

As late as the early 1970s, Harner (1973a: xiv) was able to write that academic literature on shamanism largely overlooked the use of hallucinogens by shamans. This omission has been rectified since, as later collections (*e.g.*, Seaman and Day 1994; Browman and Schwarz 1979) demonstrate. It is always *possible* that shamans in prehistory used such means as drumming, dancing, or hardship and solitude to achieve trance states before they discovered and used psychoactive plants. Wilbert (1994: 47-48) acknowledges this, but does not believe it, with regard to South American native societies. In his classic work, Eliade (1964: 223, 400-401, 477) denied that shamans traditionally had used psychotropic agents to bring about the trance state, and claimed that those who did in recent times represented degeneration from archaic practice. He was taken to task for this by Wasson (1968: 326-334), who shows that Eliade's pronouncements are assertion, not demonstration.[1] Shortly before his death, Eliade conceded that the use of psychoactive plant material was indeed archaic and that shamanic techniques were equally valid whether or not assisted by chemical agents (Furst 1994: 23).

Shamanism is discussed further in Chapter 11.

With the invention of agriculture, the rise of settled communities and the specialization of roles in more complex societies, shamanism disappeared in much of the Old World, surviving among hunter-gatherers and among the nomadic pastoralists of northern Asia. In pre-Columbian America, shamanism survived more

[1] Also, Eliade derives Central Asian words of the form *pank* for 'mushroom' and 'intoxication' from Persian *bang,* meaning 'cannabis'. Wasson shows that this derivation is untenable.

widely along with the continuing hunter-gatherer culture, but was discarded by the agriculturalists of south-western North America and the city-dwelling cultures of Central America and the Andes. These cultural changes in the Americas provide an illustration of the processes which are believed to have occurred earlier in the Old World (La Barre 1970b; 1972; Hultkrantz 1978: 52).

In the Neolithic and early Bronze Age, much of Eurasia was a zone of 'smoking cultures', like recent North America. In archaeological sites from Siberia and Armenia to western Europe, and dating from the third to the first millennium BCE, bowls have been found, made of pottery and later of bronze, sometimes perforated, which appear to be braziers for burning plant material. At some sites a residue of hemp or opium has been detected in the base of these vessels. In the Altai mountains, burial mounds have been excavated, each containing a tent-like structure over a brazier containing stones and hemp seeds, the psychoactive leaves and stems presumably having been destroyed by the fire. This is reminiscent of a practice of the Scythians documented by Herodotus[1]. The opium poppy was being actively cultivated in central Europe in the Neolithic (Sherratt 1995; Devereux 1997: 31-45; Rudgeley 1999: 139).

Sherratt (1995) proposes that the original means of consuming psychoactive plant material was by smoking, and rather by inhaling smoke from a brazier in a confined space than through a pipe. He argues that when wine and beer became common in the Near East and Mediterranean in antiquity, the liquid mode of consuming the new intoxicants was applied to the old ones, and the practice spread northwards. On Cyprus in the second millennium BCE, opium was cultivated commercially, prepared as a liquid mixture with olive oil, and exported in characteristic jars shaped like poppy seed capsules to the Levant and Egypt. Temples excavated in Turkmenistan and Tadjikistan, dating to the second millennium BCE, contained repositories for ash, presumed to be from sacred fires, and vats and strainers for liquids. Pollen traces of cannabis, opium poppy and *Ephedra* – the latter a mild euphoriant and stimulant (Wasson 1968: 126, 133, 141-142) – have been found in these. It seems that these plants, formerly smoked, had come to be prepared by grinding and infusion and consumed in liquid form.

[1] Herodotus, *Histories* IV: 75.

In the ancient civilizations of the Middle East and Mediterranean, alcohol, mostly in the form of wine, became a popular, more palatable and less cumbersome replacement for stronger psychoactives. However, wine in classical Greece and the Roman Empire could be extremely potent. Ruck (1978c: 89-93) notes a passage in Pliny[1] mentioning a wine which required dilution with eight parts of water to be drunk safely. Ruck explains that its alcohol content could not be greater than 14 per cent, since above that proportion alcohol is fatal to the yeast which produces it. The ancients were unacquainted with distillation. The extra intoxication, therefore, must have been produced by other substances. Among these, myrrh was sometimes added as a soporific. At a drinking party the symposiarch was in charge of mixing and dilution. One surmises that he was elected for his skill in combining wines, water and other substances to produce enjoyable varieties of intoxication without killing the guests. Ruck's evidence is consistent with Sherratt's proposal about the transition from inhaled psychoactives to wine and other alcoholic beverages. Wine did not simply replace the substances already known; instead it was used in combination with such of them as could practically be added.

In Mesolithic North America, it may be that highly toxic plant hallucinogens sought out by the earliest populations gave way to less toxic but still hallucinogenic species discovered later (La Barre 1974). Much later, when European liquor was introduced to North America, some native tribes adopted it for religious use, including shamanic healing (Trenk 2001: 73-81). Similarly, in Old World agricultural and city-dwelling societies, the hallucinogens characteristic of ecstatic shamanism seem to have been replaced by narcotics and euphoriants and then by alcohol, so that the ecstatic form of drug-induced experience became less common or only a memory. If this had not been so, then the experiences arising from the rediscovery of hallucinogens or minority continuance of rituals involving them would have been less striking than they evidently were (see below on 'A Blissful Afterlife').

The origin of the idea of other worlds

I am arguing not merely that psychoactive chemical agents have been used in tribal societies from the earliest times, which is now commonly acknowledged, but

[1] Pliny the Elder, *Natural History* 14: 53.

that they were the original means, and for long the only means, of attaining a trance state.

It is one thing to note that shamans in recent times have used techniques other than the ingestion of psychotropic material. But those practitioners stand at the end of a long tradition of shamanism, in the course of which numerous alternative practices for seeking altered states have been developed. If we consider a time before there was any shamanism, what is the most likely means of inducing a 'trance' state? One possibility is that early humans or prehumans engaged in rhythmic or whirling movements until they became giddy and then ecstatic: they 'danced out' their religion, as Marett (1914: xxxi) put it. But what religion were they dancing out before there was any religion? While for some of us dancing readily leads to giddiness, one surmises that it would take a long time and sustained effort to become actually ecstatic unless the subject were already intoxicated. The same applies to drumming. As for the vision quest with its physical extremes and sensory deprivation, what would induce a practitioner to go on a quest before there was any religious theory as to what a quest was for? For those physical procedures not using chemicals, the subject's intention and expectation – what in the drugs context is called *set* – are necessary to bring about the success of the procedure. But before there was any tradition there was no expectation.

The most likely means of inducing altered states before there was any theory or tradition to justify seeking them was the accidental ingestion of psychoactive plant material. An effect would not be instantaneous, except perhaps in the case of coca, but it would come about more or less inevitably and effortlessly. I hypothesize that it was these experiences for individuals that produced the notion that such states are possible, interesting and desirable, and the broader notion that there is more to the world than meets the eye in normal waking consciousness.

Such episodes of altered consciousness experienced by isolated individuals would be repeated many times all over the inhabited world where psychoactive material was available, for tens of thousands of years, long before there were any practices that we would recognize as shamanism. *Homo erectus* and even his predecessors must from time to time have eaten psychoactive material and gone out of their tiny minds. With their small brains, comprising less association cortex to run

riot than ours, one suspects that the altered states attained were less profound, less full of imagery. But they may still have been on occasion overwhelming, depending on dosage. However that may be, only when people could talk and compare their experiences was there the possibility of forming a rudimentary theory as to what they had experienced, and this represented the beginning of tradition. Tradition therefore probably did not come about until the advent of *Homo sapiens.*

For clarity, here is an explicit statement of my position. In prehistory people did not first seek out psychoactive agents in the environment so as to bring about trance states which they already knew about in their tradition and wished to attain with greater ease. On the contrary, it was the inadvertent ingestion of psychoactive plant material that first produced trance states; the repetition of these at first unintentional experiences was the origin of the awareness that trance states could be attained and were desirable, and antedated any other means of securing them.

Furthermore, it is the drug-induced experience of apparently reaching distant places or other levels of existence in which one typically encounters strange scenes and objects, and agents interpreted as spirit beings, that gives rise to the idea that there are *other worlds* besides the everyday waking world. Before these experiences, I propose, humans and prehumans did not have any idea that there could be another world. It was only when they experienced these apparent encounters that the limits of the unitary normal world seemed to be extended. At first there would be no differentiation between the normal and other worlds. But only a little reflection would be required to notice that the unusual modes of being and their unusual denizens were only encountered in the ecstatic state; they could therefore be imagined to belong to *another world.* The other world could be interpreted as a kind of place, distant but real, perhaps even physically present, and accessible by means of what would later be described as a shamanic journey.

The other worlds of shamanism, the heavens (but not yet genuine heaven) and hells above and below the everyday middle earth (Eliade 1964), with their flights and bliss, monsters and terror, can be recognized as visions induced by hallucinogens (Ripinsky-Naxon 1993: 176-177). An attempt to determine more precisely how the transculturally similar geographies and spirit-being inhabitants of shamanic other

worlds can be derived from hallucinatory experience would form a worthwhile research project.

Access to other worlds, therefore, was apparently given by an ecstatic state and ultimately by the substances ingested to produce it. The experiences were strange and fascinating – that is, they incorporated numinous feelings mediated by certain neural processes. Those neural processes were activated by the alkaloids contained in the plant material. Not unnaturally, plants which enabled numinous experiences came to be regarded as themselves numinous or sacred.

A blissful afterlife

It is with the trance-valuing shamanic form of religion that the idea of another world first arose, through the experiences detailed above. However, the other worlds which appear in shamanic contexts are not always blissful, and not yet a heavenly or resurrected blissful afterlife. How the latter conceptions may have come into being can perhaps be illustrated by examination of three cultural developments which include blissful states to be experienced in this life and hoped for after death: in Greece, in Iran and India, and in Egypt.

The Eleusinian Mysteries

For this section I have relied on Mylonas (1961: 224-285) and Kerenyi (1967).

The Mysteries at Eleusis may have begun in or after the late second millennium BCE, and continued to be celebrated until the late fourth century CE. At first the Mysteries seem to have been an agrarian cult in the possession of local families at Eleusis, fourteen miles from Athens, but when Eleusis was incorporated into the Athenian state, they were promoted as a state cult. From that time there were two celebrations: the Lesser Mysteries at Agrai in Athens in February, and the Greater Mysteries, partly at Athens but culminating at Eleusis, in September-October. The Mysteries were open to men, women and children, including slaves. At first only Athenians were eligible, then all Greeks, then, in Imperial times, all Romans. Unlike the Orphic religion, the Eleusinian cult had little or no doctrine and made no lifestyle demands on its adherents. The only requirement was that they should know Greek, so that they could understand the ceremonial utterances, and not

be ritually unclean, for example by having committed murder. A person attended the Mysteries only once in his or her life (Nilsson 1925: 211, 241, 293; Guthrie 1935: 154, 161).

Parker (1996: 25, 97-99, 188) stresses the insufficiency of evidence for great antiquity or ancient independence of the Eleusinian Mysteries from Athens. In the sixth century BCE a number of religious reforms were undertaken there, including the incorporation of the Eleusinian cult and major building work at its sanctuary. The cult of a 'mother' goddess was conducted at Agrai and linked with that of the 'mother' Demeter at Eleusis by 460 BCE.

The central myth relating to the Mysteries is that of the goddess Demeter and her daughter Persephone (Kore). Persephone, gathering flowers, was abducted by Plouton, the god of the underworld. Demeter searched for her daughter and became distraught, and refused to allow crops to grow. When the other gods became alarmed that human beings would perish and therefore cease to make offerings, an arrangement was made whereby Kore would be restored to her mother for part of the year but have to spend the rest of the year in the underworld with her new husband. The myth is related in the *Homeric Hymn to Demeter*, which was committed to writing some time in the seventh century.

When a candidate had experienced the Lesser Mysteries, he or she was an initiate called *mystes.* In the following year the *mystai* were eligible to attend the Greater Mysteries. After various celebrations at Athens, including the sacrifice of a pig, the usual animal in purificatory sacrifices (Nilsson 1925: 86), the *mystai* set off in festive procession to Eleusis. There could be thousands of candidates. They were led by priestesses carrying the *hiera* ('sacred things'), which had earlier been brought from Eleusis to Athens and stored temporarily in the temple there called Eleusinion. The *hiera* were contained in sealed containers, *kistai,* and what they were is unknown. Arriving at Eleusis in the evening, the *mystai* with their sponsors, *mystagogoi,* crossed a pedestrian bridge over a stream to the side where lay the sacred enclosure, a large area containing a number of temples and other features, including a cave called Ploutonion, presented as an entrance to the underworld. The next day, the sixth day of the festival, was one of rest and fasting.

On the evening of the sixth day, there seems to have been a pageant in which the *mystai* participated, recreating the frantic search of Demeter for her daughter. Some authorities envisage the candidates and their sponsors running about the sacred enclosure, visiting the Ploutonion and the temples, reliving the events and sharing the distress of Demeter recounted in the Homeric Hymn. Afterwards, the climax of the Mysteries, the *telete* ('completion'), awaited them when they entered the largest temple, the Telesterion. Inside this rectangular structure, tiers of steps lined the walls, and there was a large level area in the middle. Pillars supported the ceiling, and in the central area there was a shrine called the Anáktoron. The hall was lit by torches, and lighting effects may have formed part of the proceedings. There seems to have been a ceremonial dance by priestesses or by women initiates, carrying on their heads either large vessels bearing lights, or chalices called *kernoi* containing the *kykeon.*

The *kykeon* was a concoction of water, barley and mint. At some point before or after entering, the *mystai* drank this potion. In Kerenyi's (1967: 65-66, 177) view, it was before the initiates were admitted to the sanctuary, since in the *synthema,* the sentence which they had to give as a password, the phrase occurs 'I have drunk the *kykeon*'.[1] There is a possibility, less often mentioned in the literature, that earlier, to break their fast, they were given a cake, *pelanos,* made of barley (Ruck 1978b: 55). Mylonas (1961: 260) says the *pelanos* was an offering to Demeter, but this does not preclude its being shared by the initiates.

In the Telesterion the *mystai* then had an overwhelming experience, which remained with them for the rest of their lives. The initiate was awed by sounds and music and dazzled by sights and colours (Guthrie 1935: 154). Things were enacted (*dromena*), things were spoken (*legomena*), and things were shown (*deiknymena*). It is likely that, during the first two, the hall was darkened, and that there was music, and dancing by the priestesses. Finally, a deep gong was sounded and the chief priest, the Hierophant ('he who shows the sacred things') threw open the doors of the Anáktoron, and in the midst of a bright light the *hiera* were exposed. At this point the *mystai* became *epoptai* ('they who have seen').

[1] The *synthema* occurs in the context of the imitative Mysteries at Alexandria, and Mylonas rejects it for the original Eleusis (Kerenyi 1967: 206-207).

Mylonas thinks the 'sacred things' were possibly agricultural relics from Mycenean times, which he says would have impressed the later audiences, but Ruck dismisses this suggestion on the ground that agricultural implements of earlier and later times were indistinguishable (1978c: 84). Also, if they were small enough to fit in the *kistai,* they would have been too small to be seen recognizably in the Telesterion unless the initiates filed past individually. Hippolytus claimed, albeit derisively, that they were an ear of barley.[1] Other derisive and hostile identifications by ancient commentators have included a phallus, a vulva, or both of these together, or the enactment of a *hieros gamos* in the semi-darkness.

There seems to be a discrepancy between events as described so far and the awe-inspiring nature of the Greater Mysteries as recorded by the ancients. Athenian citizens, accustomed to dramatic productions including effects such as the *deus ex machina,* are unlikely to have been overwhelmed merely by a show. The Telesterion offered less than ideal space or visibility (Kerenyi 1967: 26-27, 111, 113), and Mylonas points out that no staging equipment or record of expenditure for equipment has been found.

A number of classical descriptions are quoted or cited by Kerenyi (1967) and repeated in Wasson *et al.* (1978). I give some here. According to Plutarch, '... persons being initiated into the mysteries throng together at the outset amid tumult and shouting ... but when the holy rites are being performed and disclosed the people are immediately attentive in awe and silence.... He who has succeeded in getting inside and has seen a great light adopts another bearing of silence and amazement....'[2] Plutarch again, on the journey of the soul after death foreshadowed by the Mysteries, says: 'At first [there were] wanderings and toilsome running round and through the darkness uncertain paths and blind alleys. Then, just before the end, [there were] all kinds of terrors, with shuddering, shivering, sweating and amazement. After this, a wonderful light met [the soul]; pure landscapes and meadows, containing voices and [choric] dances and the solemnities of sacred instructions and holy visions, received [the soul]'.[3] Cicero says the Mysteries were

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[1] Hippolytus, *Refutation of All Heresies* 5.8.39.
[2] Plutarch, *Progress in Virtue* 81e.
[3] Stobaeus, *Anthologium* LII.49 (ed. Hense, vol. V, p.1089). The section claims (LII.48) to be citing Themistius, but it is accepted that this text is derived from Plutarch, *On the Soul.* The correct reference is given only by Kerenyi (1967: 204), but the translation comes from Ruck (1978b). I have modified

the best thing that Athens had brought to mankind, and that they gave a reason not only to live with happiness but also with the hope of a better death.[1] Plato describes in terms of the Mysteries the soul before its imprisonment in the body. The soul was then like an initiate, in a state of perfection, seeing perfect, simple, calm and happy appearances – which I take to be the pure forms.[2] One who is newly initiated is better able than the rest to apprehend beauty in this world as a likeness of the genuine beauty of the forms.

In 171 CE, invading barbarians set fire to the temples at Eleusis, and the profanation troubled Aelius Aristides, who was probably an initiate (Behr 1968: 110). According to Wasson (1978: 17-18), Aristides has these things to say about the *telete:* 'new, astonishing, inaccessible to rational cognition', 'most awesome and most luminous', 'miraculous tidings', 'ineffable visions', 'where has there been such rivalry between seeing and hearing?'.[3]

Guthrie (1935: 155) suggests that the initiates were promised Elysium, and that this hope filled them with bliss and joy. Mylonas reports earlier opinion that the fasting, 'mystic food', and the passion play of Demeter and Kore could induce in the worshipper a sense of mystic union with the divinity. So the Mysteries assume the form of an audience-participation Oberammergau.

After all this, Mylonas confesses: 'I cannot help feeling that there is much more to the cult of Eleusis that has remained a secret'. The secret of the Mysteries was sustained successfully throughout antiquity, over more than a millennium. The laws of Athens made it a crime to reveal what happened in the Telesterion, but even when Athens was only a subordinate city within the Roman Empire the secret was kept (Kerenyi 1967: 112; Ruck 1978b: 55-57). That the Mysteries were so overwhelming as to conjure such reticence demands explanation. It will be observed

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it, rendering word for word wherever possible. Without embellishments, the passage is, if anything, more striking. The term *akousmata* ('things heard', translated as 'sounds' by Ruck) was used of instruction in the Pythagorean schools.

[1] Cicero, *On the Laws* 2.14.36.

[2] Plato, *Phaedrus* 249e-251c. Ruck seems to take the appearances (*phasmata*) to be of spirit beings.

[3] No reference is given for these quotations, and the only reference in Wasson *et al.* 1978 to any work of Aristides is to his *Panathenaic Oration,* 373. The latter simply makes clear that Eleusis was the largest festival of its kind and was attended by multitudes. Following the trail left by Kerényi (1967: 203), who cites 'ineffable' visions from Aristides *Oration* XXII, 257, I found the second, third, fourth and fifth of Wasson's quotations in *Oration* XXII, 256-257 (Aristides Vol. 2, ed. Keil, Berlin 1898, p.28).

that the principal unknowns are: (1) what exactly happened in the Telesterion, (2) what were the *hiera*, (3) what was in the *kykeon* and *pelanos*? I shall deal mainly with the last, which I think is the key to the whole mystery.

The kykeon and pelanos

Aristides' rhetorical question 'where has there been such rivalry between seeing and hearing?' seems to indicate synaesthesia. Wasson relates how, during his intoxication with *Psilocybe* mushrooms at a shamanic séance in Mexico, sights seemed to take on rhythm, and the shaman's singing had colour and shape. He tells us 'ecstasy is not fun' (Wasson 1978: 18). Trembling in the limbs, shivering and sweating were symptoms which the initiates experienced while waiting in the Telesterion. Even if there was a pageant and enactment, these symptoms are not effects of watching or participating. But they could have been physiological reactions to the toxins contained in any of various hallucinogenic plants. Ruck points out that every year for hundreds of years Eleusis was able to induce a memorable experience for thousands of initiates. There is no record of anyone coming away saying it was not all it was cracked up to be. The dependability of the effects seems to demand not merely a good show but a reliable chemical agency (Ruck 1978a: 37; 1978c: 80).

Valencic (1994: 326) says that either Kerényi or the writer Graves was the first to propose that there was an hallucinogen in the *kykeon*. Graves favoured either the fly agaric or *Panaeolus,* another mushroom related to the Mexican *Psilocybe.* Recall that the *kykeon* was an infusion of barley and mint in water. The mint *blechon* or *glechon* is generally identified as *Mentha pulegium,* pennyroyal, used in perfumes. Kerenyi (1967: 178-179, 214) suggests that the barley was fermented, and that the mint was psychoactive. He cites a personal communication from Hoffmann to the effect that an aromatic oil made from wild pennyroyal, if ingested in large doses, can produce delirium and spasms. Ruck (1978c: 100; 1986: 162-163) says the mint has only slight psychoactive properties. However, mint can counteract the nausea induced by certain fungal preparations (Valencic 1994: 328).

It is the central thesis of Wasson, Hoffmann and Ruck (1978) that a fungal growth on the barley component of the *kykeon* was the hallucinogen responsible. This growth is ergot, which, if consumed in flour made from infected grain, gives rise to ergot poisoning or ergotism. Ergotism can manifest in hallucinations and

convulsions. Of great interest is the fact that the most powerful hallucinogen known, LSD, is a synthetic variant of the psychoactive ergoline alkaloids. The ergot hypothesis is discussed in Appendix 10A.

Inside the Telesterion

Assuming an hallucinogen was employed, whatever its identity, I offer a scenario of what happened inside the Telesterion and what the *hiera* were, based on Kerenyi (1967) and Ruck (1978a; 1978b; 1978c) but with some additions.

Inside the Telesterion were tiers of steps around the walls, on which people could stand or sit. Owing to numbers, probably many stood in the space in the middle, which was filled with evenly spaced pillars. The space was lit by flaming torches. Not quite in the centre stood the closed Anáktoron, possibly with a great fire burning inside it. Earlier, the initiates had drunk the required draught of *kykeon* and perhaps had been given the putative cakes made from the harvest of the Rarian Plain. The mood of expectancy was heightened by music, chanting and perhaps by the release of perfumes. Ruck is surely correct that the functionaries of Eleusis were aware of the importance of set and setting.

At some point the *kistai* were brought out, and opened so that the initiates could see and handle the sacred objects, which Ruck identifies as cakes, balls of salt, pomegranates, poppies, fig branches, a serpent and a *thyrsos* (a hollow stem used for gathering berries).[1] On the other hand, rather than this collection, the *hiera* may just have been stalks and ears of barley, as stated by Hippolytus (see above), easily recognizable even from a distance but rendered mysterious by the circumstances.

As the hallucinogen began to take effect, the initiates would have begun to experience synaesthesia; the music and voices would have seemed to come from various directions; colours would have been heightened; vertiginous sensations and depersonalization may have ensued. Possibly the torches were put out, and in the darkness sensory deprivation would have give rise to free hallucination. At the

[1] This list of objects Ruck, following Kerenyi, gets from Clement of Alexandria, *Exhortation to the Greeks* 2.19. However, I find that Clement additionally lists marjoram, a lamp, a sword, and a woman's 'comb', which he says is a euphemism for private parts. It all seems rather a lot to fit into a kist. Like some other Church Fathers, Clement was familiar with the 'Eleusinian' Mysteries at Alexandria, which, instituted in the Ptolemaic period, were an imitation of the Attic Eleusinian Mysteries. They included erotic tableaux and were not kept secret (Kerenyi 1967: 115-120). But even Kerenyi applies some of Clement's testimony to the original Eleusis, which I find surprising.

climax, there was a sound of subterranean gongs, and the Hierophant intoned: 'The lady Brimo has given birth to the lord Brimos!'[1] The Anáktoron was thrown open, and in the light of a great fire the initiates witnessed Kore with her son. She had come back from the dead. Given their immersion in the story of Demeter's loss and distress, the type of all human bereavement, one can imagine that the hearts of the initiates leaped with a surge of joy. The priestesses going about, perhaps not having partaken themselves of the hallucinogen and still dancing with headdresses bearing lights (Kerenyi 1967: 182-185), may have seemed like supernatural beings.

Blessed life after death

The above scenario confirms but extends mainstream scholars' view that the Greater Mysteries involved a kind of passion play. But this is Oberammergau on acid. That is why it made such a powerful and lasting impression on the ancients. They experienced it only once in a lifetime. Wasson and Ruck avow a personal feeling of brotherhood with others at Eleusis, in Mexico and elsewhere throughout the ages 'who have experienced the superior hallucinogens'. Putting aside the ego trip in favour of the ergot trip, I think one is bound to agree that a sense of fellowship, reverence and fidelity to the Mysteries would be a natural consequence of such powerful experiences. That is why the secret remained unrevealed.

Most importantly, as Ruck phrases it, 'Huddled in the darkness in the initiation hall, they saw something that validated the continuity of existence beyond the grave'. Baillie (1934: 103) tells us that the Hellenistic belief in a blessed immortality arose not from thought but from what for the classical Greeks was a new kind of religious experience, as exemplified by the Eleusinian Mysteries. The evidence of the initiates' own senses convinced them that they were changed, saved and assured of a blessed life after death (Guthrie 1935: 154; Kerenyi 1967: 13-16).

In the case of Plato we have someone on whom the experience of the Mysteries made a great impression. His mystical faith was as strong as that of any uneducated slave who just accepted that he had seen the goddesses appear from the Anáktoron. He combined a towering analytical intellect with receptiveness to non-rational experience. This combination motivated him to makes sense of and

[1] This scene is from Hippolytus, *Refutation of All Heresies* 5.8.40-41.

rationalize the faith, developing doctrines concerning the soul and immortality which have influenced all later western thought. The western conception of a blessed afterlife is owed not only to Judaeo-Christian (ultimately Zoroastrian) apocalyptic but also to the poetry of Plato's dialogues (Guthrie 1935: 238, 244).

Zoroastrianism

In ancient India and Iran, it appears that a tradition existed of priests ceremonially drinking a concoction, mixed from juice pressed from a plant, which raised them above the everyday world. This is the famous *soma* of the Rig Veda and *haoma* (the plant) and *parahaoma* (the potion) of the Avesta. In hymns of Book IX of the Rig Veda, *soma* itself is elevated to the status of a god. The Vedic translator Renou felt that *soma* was the heart and soul of the canon (Wasson 1968: 60). It has long been accepted among Vedic and Iranian scholars that *soma* and *parahaoma* were the same potion, and since the late eighteenth century it has been suspected that they contained psychoactive agents. As the tradition is attested in the oldest literature of both India and Iran, it appears to date from a time before the proto-Indo-Iranians went their separate ways, even to the period when they inhabited Central Asia.

Effects of soma and haoma

Ingalls (1971: 191) says 'the *soma* experience was always an extraordinary event, exciting, immediate and transcending the logic of space and time'. The *parahaoma* produced exhilaration and heightened powers, inspiration and possession by divine power. Unlike alcohol and indeed contrasting with most other intoxicants, it gave no harmful side effects (Boyce 1975: 158).

Here are some illustrative verses from the Rig Veda, taken from O'Flaherty's (1981) anthology:

Accompanied by the gods, the eagle brought the exhilarating and intoxicating drink from the distance. ... ecstatic with Soma, the wise one left the fools.

(IV.26.6-7)

The white goblet ... the clear juice offered by the priests – now let the generous Indra raise it to drink until ecstatic with Soma; let the hero raise it to drink until ecstatic with Soma.

(IV.27.5)

The whole universe is set in your essence within the ocean, within the heart, in the life-span.

(IV.58.11)

I have tasted the sweet drink of life, knowing that it inspires good thoughts and joyous expansiveness to the extreme, that all the gods and mortals seek it together.

We have drunk the Soma; we have become immortal; we have gone to the light; we have found the gods.

The glorious drops that I have drunk set me free in wide space. ...

...Soma has climbed up in us, expanding. We have come to the place where they stretch out life-spans.

The drop that we have drunk has entered our hearts, an immortal inside mortals.

Uniting in agreement with the fathers, o drop of Soma, you have extended yourself through sky and earth.

(VIII.48.1,3,5,6,11-13)

Be kind and merciful to us, Soma; be good to our heart, without confusing our powers in your whirlwind.

King Soma, do not enrage us; do not terrify us; do not wound our heart with dazzling light.

(VIII.79.7-8)

Soma, who bring supreme ecstasy, be sweet for Indra to drink.

(IX.74.9)

Where the inextinguishable light shines, the world where the sun was placed, in that immortal unfading world, o Purifier, place me. O drop of Soma, flow for Indra.

Where ... heaven is enclosed ... there make me immortal. O drop of Soma, flow for Indra.

Where they move as they will, in the triple dome, in the third heaven of heaven, where the worlds are made of light, there make me immortal. O drop of Soma, flow for Indra.

Where there are desires and longings, at the sun's zenith, where the dead are fed and satisfied, there make me immortal. O drop of Soma, flow for Indra.

Where there are joys and pleasures, gladness and delight, where the desires of desires are fulfilled, there make me immortal. O drop of Soma, flow for Indra.

(IX.113.4,6-11)

Like impetuous winds, the drinks have lifted me up. Have I not drunk Soma?

The drinks have lifted me up, like swift horses bolting with a chariot. Have I not drunk Soma?

The two world halves cannot be set against a single wing of mine. Have I not drunk Soma?

In my vastness I surpassed the sky and this vast earth. Have I not drunk Soma?

One of my wings is in the sky; I have trailed the other below. Have I not drunk Soma?

I am huge, huge! Flying to the cloud. Have I not drunk Soma?

(X.119.2-3,7-8,11-12)

In some cases, the poet speaks as Indra or as a priest impersonating Indra; in others, it appears that the poet speaks just as a priest. But the descriptions of altered vision, flight and bliss read more like memory than imagination.

Identity of the plants

Soma and *parahaoma* are like the *kykeon* of Eleusis. One has to distinguish between the potion and the plant ingredients. The potion was a mixture with perhaps one principal psychoactive ingredient, although other plants may have been added. In the Rig Veda and the Avesta, we are told that plant material was crushed with stones to make its juice flow, and this was mixed with milk, water or both (Boyce 1975: 159-160).

In both India and Iran during the first millennium BCE, substitutes came to be used in place of the original *soma* plants. The substitutes, in Iran *Ephedra*, and in India millet and a variety of other plants meeting specific criteria laid down by priests, are only mildly or not at all intoxicating, and no intoxication was expected (Wasson 1968: 96-100; Flattery and Schwartz 1989: 14).

The principal constituent of *soma* and *parahaoma* is usually identified as either the fly agaric mushroom or Syrian rue. There is a continuing controversy on this matter. The properties of these plant substances and the controversy are discussed in Appendix 10B.

Zoroaster

Fascinating though the controversy is regarding the identity of *soma* and *haoma,* it is not controversial to affirm that Iranian religion at the time of Zoroaster

included the consumption by priests of an intoxicating substance which induced uplifting and visionary altered states.

It is generally assumed that Zoroaster was a real person, despite the early dating to 1000 BCE or before (Boyce 1975: 190). As with Moses, dated to a comparable era, there were accretions of minor myths about him. I shall carry on as if Zoroaster were a single person, but even if the reforms attributed to him were inaugurated by several people over a few generations the argument is not affected. Zoroastrian teachings are incorporated in hymns known as the Gathas, in an early form of the Iranian language still similar to the Sanskrit of the Rig Veda.

Zoroaster was a priest trained in the 'pagan' Iranian religion of his time, which had an Indo-European pantheon of sky gods and others, again resembling the pantheon of the Rig Veda. Zoroaster refers to himself as an 'initiate'; he was a prophet in a tradition of those whose utterances came from meditation accompanying the rituals which they conducted. There were contemporary prophets who had their own conflicting inspirations, and his message was better received among strangers than among his own immediate folk (Boyce 1975: 8, 11, 12, 184, 189).

The view that Zoroaster condemned the consumption of haoma is mistaken. It is supported by only one Gathic verse, which should be interpreted as condemning some debilitating, rather than exhilarating, intoxicant. The continued observance by Zoroastrians of the *haoma* rite along with other features of the older religion indicates the prophet's approval (Boyce 1975: 216-218).

Unlike contemporary Near Eastern and Mediterranean cultures, the semi-nomadic proto-Indo-Iranians had no fixed temples containing images. In consequence their divinities were not limited by attachment to particular locations; they could be imagined as possessing universal authority over their spheres of being (Boyce 1975: 22-23). Even before Zoroaster, therefore, the proto-Iranians were primed for a religion with concepts of cosmic grandeur.

According to legend, one morning at dawn Zoroaster waded into a river to fetch water for the *haoma* ceremony, and experienced a vision. A shining being appeared, who led him to the blazing presence of the Bounteous Immortals and of the high god Ahura Mazda. Enlightenment came upon him. It was in this encounter with the high god that Zoroaster realized his calling (Boyce 1975: 184-185). The grandeur

of his innovative expectation that the present age will come to an end, and of the 'making wonderful' at the end of time, I have alluded to earlier. His theology ascribes to the Lord Mazda a more exalted state than is known for any other divinity in antiquity before the exaltation of Yahweh in post-exilic Judaism (Cohn 1993: 81; Boyce 1975: 198).

In the theophany we recognize an enraptured state resembling those recorded for St Paul and Muhammad. As discussed in Chapter 5, it would appear to some workers that epileptiform neural activity must be responsible for such a vision. In Zoroaster's case, there is no need to posit a disposition to epilepsy, because as a priest he was in the habit of drinking *parahaoma,* which might be expected to induce exhilaration and visions. According to the legend, the great vision occurred before the ceremony at which *parahaoma* would have been drunk by the priests. However, it seems likely that this vision was the most striking of many which the prophet must have experienced in the course of his priestly duties. One suspects that the founder of what is known to us as Zoroastrianism had over many years numerous spiritual experiences under the influence of *parahaoma,* which both generated and confirmed, in a virtuous circle, the expanded conceptions of divinity which he elaborated intellectually. More than his brother priests, I theorize, Zoroaster had the intellect and the determination to be able to develop a new theology out of his own existential spiritual encounters. In this respect the prophet resembles later founders such as Plato, St Paul and the prophet of Islam.

Egypt

If Egypt is the third major area west of China where the conception of heaven arose, and is independent of India, Iran and Greece, then it should be expected that an historical process generating the conception occurred there analogous to the one which I have argued for the other centres. That is, (1) there should be a tradition of ritually ingesting psychoactive material to produce altered states of consciousness in which the subject feels translated to another plane of existence; then (2) there should be some religious innovator or innovators who make explicit a doctrine which represents that new plane as another world to be entered upon after death.

Of these, there is evidence of (1), but, so far as I know, there is no figure in Egyptian history who corresponds to a Zoroaster or Plato. One would wish to

identify someone like Akhenaten, but Akhenaten is associated with a quite different innovation and is much too late. It is not surprising that a non-Egyptologist does not know of a suitable figure, and it may be that there are some. However, even if no specific individuals can be identified, there should not be a presumption that there were no such thinkers. The inventors of this doctrine are most probably to be found among the inventors of other religious doctrines: the numerous but mostly anonymous members of the Egyptian priesthoods.

The water lily and the mandrake

For this section the substance is due to Emboden (1989, 1982, 1981, 1979).

The Egyptians were no strangers to narcotics. I have referred above to Sherratt's (1995) evidence for the widespread use of opium in the ancient world, including Egypt. Of numerous scent-bearing plants available in Egypt, only certain ones are depicted regularly and in combination, so that the attribution of their popularity merely to scent is unconvincing. The opium poppy is widely illustrated in Egyptian paintings with its capsules incised to extract their juice. Two other, less well known, plants containing psychoactive substances are depicted in association with poppy capsules or in scenes of mourning or healing. These are mandrake and the blue water lily. Emboden argues that the association of these three indicates similarity of function.

In some works on Egypt, the water lily is described as a 'lotus' (*e.g.*, James 1979: 214-215). The genuine lotus *Nelumbo nucifera* was introduced to Egypt about 700 BCE, whereas the water lily is native. There are two principal species, the white lily, *Nymphaea ampla,* and the blue lily *Nymphaea caerulea.*[1] These are water-borne plants. The flower of the blue lily opens at dawn and closes at noon, and after three days' bloom the closed flower is drawn below the water, where it will generate its seed. By this time the flower contains insects which have pollinated it but have died from the poisonous nectar. This nectar is alleged to be psychoactive.

The alleged psychoactive properties of mandrake and the blue water lily are discussed in Appendix 10C. Some illustrations are given at the end of this chapter.

[1] The blue lily has a white variety *Nymphaea caerulea albiflora.*

Emboden draws attention to the abundant depictions of Egyptian royal personages holding blue water lilies, or wearing chaplets or garlands of the flowers, or offering flowers to another person. The flowers were apparently dipped in wine to allow the psychoactive nectar to be drunk. There are depictions of people holding open flowers to their faces or to the faces of others, so that they may enjoy the scent or drink from the flowers. Some scenes appear to show the plants being offered for healing, as when the ailing Tutankhamun receives flowers and buds from his wife Ankhesenamun. There are a number of illustrations showing blue water lilies and mandrakes in bunches together.

In tombs jars have been found which are generally interpreted as containers of perfumes or unguents (*e.g.*, James 1979: 215). On two grounds, Emboden argues that the contents were not unguents but elixirs made from the blue lily or opium. Firstly, he thinks the necks of these jars are too narrow for easy pouring of salves, which would be more viscous than potable liquids. Secondly, the jars were emptied of their contents by robbers in cases where jewellery and other rich artifacts were ignored. The latter indicates that the contents were regarded as the most valuable commodities in the tomb: possibly that they were believed to be an elixir known as *didi* which could bestow life after death. If this elixir was placed in the tomb for the future of the deceased, then it is probable that it would also have been consumed by the living. One suspects that a substance would be regarded as an elixir of life only because it had profound effects on the living.

The ceremonial practices of the Egyptian priesthoods were conducted for the benefit of an intellectual class and unknown to the majority of the population. Even the complex mythology is unlikely to have been of much interest to ordinary people. Until the end of the Old Kingdom, when the exclusive power of royalty collapsed, knowledge of the spells for attainment of a blessed life after death was available only to the ruling class (James 1979: 132-133, 163).

Emboden hypothesizes that some of the Egyptian priesthoods retained knowledge of prehistoric shamanic traditions, including the use of psychoactive plants. Possible shamanic survivals in Egyptian religion, as identified by various authorities, are discussed by Ripinsky-Naxon (1993: 37-42). They include the wearing of ritual animal masks by priests and the Osirian legend as reminiscent of

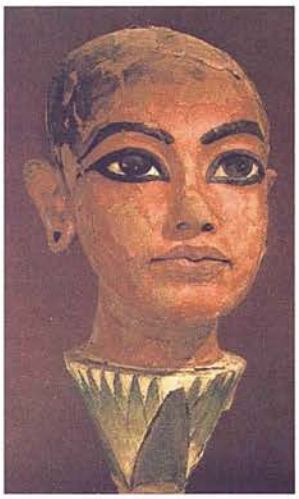
the shaman's death, dismemberment and rebirth at initiation. The Pharaoh, as high priest (James 1979: 139), and other members of the royal family would have been privy to ancient tradition, and participated in esoteric practices. They used the water lily, opium and mandrake to induce trance for shamanic healing, in which either healer or patient or both are aided by being in an altered state. More broadly, the altered states of consciousness which they experienced removed the cares of this world and were interpreted as giving a presentiment of a blissful life to come.

The genesis of a doctrine

An apparent objection arises. If the shamanic experience of ecstasy was once so widespread and near-universal in Eurasia, and indeed Africa, as it was until recently in the Americas, and that experience is the core of the idea of a blissful afterlife, why is it that the idea of heaven or of a blissful afterlife did not arise automatically all over the world in prehistory? Why is it that, in complete contrast to such universality, it can apparently be dated and localized to particular historical cultures, such as certain phases of the Egyptians, Indo-Iranians and Greeks?

The answer, I think, is that the experience is necessary but not sufficient. The ecstatic experience is a present one; it does not of itself promise its repetition and eternal continuance after death. To get from an indubitable, present, this-life enraptured experience to a hoped-for belief in an enraptured afterlife requires doctrine, however rudimentary. A new doctrine capable of dissemination requires a metaphysician or a prophet to conceive it in a leap of speculation. Perhaps we can identify two such: Plato and Zoroaster. The belief in a blissful afterlife was the product not of the experience alone but of thought applied to it: it has come about when experience has met speculation.

I suggest that, once doctrine is in place and people grow up learning about it, being taught to believe, an individual verificatory experience of another world becomes unnecessary. Those who have not had the experience can listen to the tales of those who have, and the tale contains an interpretation of the trip. So in the religions of later antiquity, the Middle Ages and modern times, the belief in immortality and heaven continues to be widespread, with or without individual verification.

		
Blue water lily (from web)	Nakht and his wife with blue water lily held to the face, and bunch of blue water lilies on right (from web 'Tour Egypt')	Tutankhamun (right) holds a vessel filled with upright (lily) flowers and the queen pours water onto them (from Edwards 1976)
		
Tutankhamun as Nefertem, reborn, like sun god at creation, from blue water lily (from Edwards 1976)	Faience 'perfume' vessel with representation of lilies, from Nubia (from James 1979)	Consort Meriton (right) offers Semenkhkara, leaning on stick (crutch?), a bud of the blue water lily and two mandrake fruits, holding more flowers in her left hand (for healing?) (from Emboden 1981)

CHAPTER 11

RELIGIOUS SPECIALISTS: SHAMANS

In putting forward a theory of the origin of the idea of heaven, I have already named two major religious innovators of antiquity: Zoroaster and Plato. They were responsible for doctrines which expanded the religious horizons of their own and subsequent generations. Some others, including legendary figures, are Pythagoras, Moses, the Israelite prophets, and poets such as Virgil. Doubtless in antiquity there were many other innovators, most now unidentifiable.

In modern western society there are religious specialists known as priests, rabbis, imams, monks, ministers, mystics, witches, clairvoyants and so on. They study and seek to experience their field of expertise to a level much above that of most other members of society. Religion as a subject of study has always been a minority interest. In both traditional and new-age religions, new developments come from those who are specialists or have particular 'spiritual' predilections.

In tribal societies too, religion may be the concern of everyone, especially elders, but is usually the particular concern of someone, whom we call the witch doctor, medicine man or shaman. Such a person is the religious specialist, and it is from him or her that new developments and understandings come. I propose that it was so also in prehistory: that there have always been religious specialists, those who are interested and have a motivation to excogitate a conception of man's place in nature.

Vast literatures exist describing the doctrines of traditional religions and the myths of ancient ones; and publications, including websites, abound on the commonplaces and smug, arbitrary dogmas of new-age religion. Much has been written about souls, gods and spirits, the stories of their adventures and the other-worldly realms in which the adventures sometimes take place. None of these supernatural entities or realms is accessible to normal, publicly sharable perception, examination or analysis. As a result, theories about their significance or reality can be argued about endlessly. However, the people who tell us about supernatural entities and realms *are* accessible to analysis. Study of people, rather than the stories they spin, may produce genuinely illuminating knowledge (La Barre 1970a: 161).

Role of the religious specialist

One wants to know why and how certain people are able to become religious specialists and tell us about the supernatural. As I am concerned with origins, I shall concentrate on recent tribal societies whose mode of life is most like that of our ancestors (Chapter 1), and try to extrapolate from them to the prehistoric human and prehuman condition. A realistic analysis of this matter has long ago been offered by Paul Radin (1938). Radin's theory is reprised in his later work (1953). I shall use his insights to assemble a naturalistic rather than romantic view of the role of the religious specialist, covering these points:

- Types of people in any society
- Doctrine elaborated by specialists
- Social motivation of specialists
- Specialists' techniques to convince others
- Milieu of belief in which specialists function

Afterwards, I shall try to analyse the nature and inner motivation of religious specialists as they might have applied in prehistory.

Thinkers and practical people

In all societies, ancient and prehistoric as well as modern, we can assume that there have been both thinkers and practical people. In the religious sphere, there are those who are interested in or even dominated by religion and issues of the supernatural; there are also those who get on with everyday life, usually accepting that there is a supernatural dimension but not giving it much attention. The latter may be called the *laity*. Religious thinkers have been a minority, but have often assumed a degree of importance in their societies. Radin identifies three types: the strongly religious, the intermittently religious and the indifferently religious, the latter two composing the laity. Among the intermittently religious are those who are weakly religious at any time, who accept a supernatural dimension in their everyday life without being fascinated by it, and those who are strongly religious only at times of crisis, who rarely bother with the supernatural but invoke its aid when security is threatened. The strongly religious person is typically a religious specialist: in a broad sense a shaman or a priest. Such a person in his or her generation is typically both the

custodian of society's traditions regarding the supernatural and the source of any new ideas about it, a religious formulator.

Radin dismisses the widely criticized view of Levy-Bruhl that primitive people manifest a prelogical mentality or a mystical participation in the world. As indeed we might expect from the fact that human beings, even at a tribal level of organization, have been extraordinarily successful organisms on our planet compared with other mammals, there are practical people in low-technology societies just as among us. People have not survived in the jungles of South America or on the savannahs of Africa by being visionaries, even if some of them are, but by understanding the practical opportunities and limitations of their environment and successfully exploiting it for food and shelter. But there are different types of thinkers.

There is a danger that ethnographers mistake the theories of a religious formulator for the views of people at large. Not unnaturally, on enquiring about the traditions practised by a tribe or its beliefs, the ethnographer will be directed to the guardian of tradition, the religious thinker, who may also be a formulator of new ideas. Radin cites the discovery of a clearly delineated concept of a supreme being among the Wintun people of California. The concept was in fact due to a single highly gifted religious thinker. The generality of people had only 'the vaguest notion' of a supreme being, and no coherent theory of spirits: the soul of an ordinary person when deceased was variously described as appearing in the form of a whirlwind and as requiring acorn meal to be offered to it.

Doctrines

The variety and inconsistency of stories about the supernatural reported from tribal people are largely due to the fact that there are two sources of ideas: the religious thinker and the laity. One may add that religious thinkers of different generations may have promoted somewhat conflicting ideas, yet the ideas of an older thinker may be recollected and transmitted alongside the developing theories of a new thinker, adding to the confusion.

Radin contrasts the formulations of the religious thinker with what he calls the *folkloristic background,* the ideas and practices of non-specialists regarding the

supernatural. The folkloristic background consists of stories and vague conceptions about supernatural beings and a body of magical ideas and activities concerned with coercing aspects of nature or the associated supernatural beings. With Frazer, Radin is certain that magic preceded religion (1938: 59-61); but, as the question is largely a matter of definition, I shall not discuss this issue.

Some peoples have highly developed 'theologies' or theories about the supernatural; others do not. The creative theorizing of the shaman can bring about a new relation between people and the supernatural, when his or her theories are accepted and become the theology of the people, whether or not fully understood. In some cases religious thinkers are able to dominate the people and to have their theories accepted. In other cases this does not happen. It is the economics of subsistence that determines whether the thinker succeeds.

The Kiwai of New Guinea, who practised agriculture in fertile land and enjoyed a secure and adequate food supply, had no elaborate theory of spirits. This is because there was no opportunity for medicine men to seize power by exploiting the people's insecurity. Instead, one could say that among them 'the folkloristic background reigns supreme', with magical rites predominant and little attention being paid to the precise nature of the spirits. The laity had no interest in knowing any more about spirits than necessary for subsistence, so the religious specialists contented themselves with being experts on the folkloristic background.

Among the San of southern Africa, a hunter-gatherer society among whom subsistence was low-level but straightforward, again there was no wide acceptance of elaborate theory. According to Radin, in most of the 'very simple' societies like this one, the beliefs of the layman 'play havoc with all the schematizations and clarifications of the medicine man and thinker'. As a result, for example, the San rain-being is inconsistently represented: sometimes as an animal, but not always the same one, or as a 'nondescript animal-like being' which lives in a waterhole, or an imaginary animal-like being which accompanies protected real animals; or she is not delineated at all.

In contrast, the Eskimo, whose fishing-hunting way of life was precarious and pursued in an extremely adverse climate, had a very complex theory of supernatural beings and of taboos. In this case the shamans were able to exploit the economic

insecurity of the people and controlled the whole life of society by means of their professed specialist knowledge and power over the supernatural realm. Their religion was dominated by fear of demons and the dead.

Social motivation

According to Radin, the forms assumed by religion in primal societies depend upon economic and social structure. The determinant is not methods of food production as such – agriculture versus hunting and gathering, for example – but whether the mode of subsistence allows the development of a caste or class of religious specialists, and, if it does, then whether it is profitable for them to elaborate ideas about the supernatural.

The observation that the type of religion is related to the nature of its society is not of course unique. According to Coon (1972: 286), societies which emphasize rank and wealth have myths about family ancestors; societies which do not have sharp rank or wealth divisions have myths about a creator or common ancestor. However, Radin's observation is not to be equated with the Durkheimian view that religion serves a function in society. It is not that a stratified society is served by a complex priestly religion. Rather, the secession from subsistence-orientated everyday life of a caste of religious specialists allows them the leisure to excogitate theories about the supernatural. Eventually, in more and more highly stratified societies, they become priests and use their theories to maintain their advantage and perpetuate their caste.

In Melanesia and many parts of North and South America, where agriculture was practised but castes not strongly developed, there was 'no trace' of deities as opposed to mere spirits. This is presumably because the religious formulators had not had the leisure to invent further ideas about spirits and turn them into gods. In the 'simple' fishing-hunting cultures of North America – that is, excluding the complex hunter-gatherers of the North West Coast – the religions all share a relative absence of speculation regarding the supernatural.

Across the world, Radin correlates the existence of class distinction in society with refinement of the notion of spirits into a hierarchy or pantheon. Gods are perhaps a sort of high-caste spirit.

In this study I have not set out to explain how gods, as opposed to mere daemons (Chapter 7), could have been thought of. However, gods of large-scale natural phenomena such as mountains and rivers appear to be analogous to local daemons, but associated with extensive as opposed to small places. Gods which preside over human activities, such as marriage, childbirth, war and counsel, as found in Greek and Roman civilization, seem likely to be pure inventions of leisured religious formulators. Following La Barre (1972: 267), I propose that the universal deities which came to prominence in the thought of the late first millennium BCE could not have been conceived before the consolidation of the empires of the Persians, Hellenistic Greeks and Romans, incorporating wide geographical areas and diverse peoples. The grandeur of these conceptions of divinity owed much to the enlarged appreciation of the scale of the world which became available even to ordinary people during that era.

Belief in a supreme being often existed in fishing-hunting tribal societies, such as the Ainu, Andamanese, Fuegians, the Semang of Malaysia and many North American tribes. They pursued a mode of survival which must have resembled, more than do any other recent lifeways, that of coastal-dwelling Mesolithic or Palaeolithic peoples. This has indicated to some the fascinating possibility of a primordial monotheism in remote antiquity (Lang 1898; Schmidt 1931). However, Radin maintains that only the shamans held this belief; ordinary people knew little or nothing of a supreme being. The supreme being's functions as creator and ethical judge were inventions of the shaman class as 'an incipient intellectual aristocracy'. Their professed relation with the supreme being helped to set them apart and create for them a 'semi-sanctity' which consolidated their advantage. More wide-ranging evidence against the theory of a primordial high god in Africa is given by Sharevskaya (1973: 38-48).[1]

The rigid class system of the Maori allowed religious specialists to develop a complex theology, knowledge of which did not, however, filter down to commoners.

[1] Since Radin, much ethnology has continued to be written without any statement about the identity or status of informants. In a somewhat revisionist article in favour of the high-god concept, Ogot (1972) tells us that 'the Padhola's conception of God (*Were*) is that of a white, merciful and good Being'. But who were the Padhola informants?

Among the Mehinaku of Brazil, new 'spirits' and associated rituals have been instituted actually during the residency of ethnographers, leading to the inference that earlier cults have been similarly instituted by individuals in the past. Their culture allows individual religious experiences to generate innovations which become integrated into the religious complex of the tribe, provided that the innovations conform to an established norm. It is suggested that, while some innovators have had genuine personal visionary experiences, others have contrived them and merely invented rituals to gain status and influence (Ripinksy-Naxon 1993: 14-15).

Drawing upon Evans-Pritchard (1937) and Nadel (1935), Radin shows how in Africa chiefs and medicine men have promoted the belief in magic and witchcraft for their own economic advantage.

For the Azande of the Sudan, misfortune and illness were attributed to witchcraft practised by malicious individuals. Suspects were tried using oracles in which the fate of a poisoned chicken indicated guilt or innocence. However, chiefs and the wealthy class were excluded from accusation. The chief's power was based upon his control of the oracles.

In West Africa, the Nupe had female witches. The head of the best organized order of witches was also the leader of the women in the area, supervising the market and dealing with disputes among women. She was appointed by the chief. As a 'good' witch, she was responsible for bringing to justice others who used their craft for evil purposes. Ostensibly the partnership of chief and leader of the witches operated to restrain the practice of evil witchcraft. However, Radin points out that the suppression of witchcraft is less significant than the degree to which it is allowed to flourish. In other words, playing along with the idea that witches operate, drawing attention to the supposed dangers and accusing supposed practitioners, brought the chief and the leader of the witches both prestige and the fearful respect of others.

Further, if it was perceived that many witches had become active, causing fear among the people, matters were taken out of the hands of the chief and the local witches' leader. Instead, a secret male society assumed responsibility for dealing with the situation. Its members allegedly had supernatural knowledge imparted by spirits; they were not possessed by the spirits, but rather controlled the latter using special magic. The membership was selected by the head of this society, and he in

turn was appointed by the king. Usually at harvest time, when wealth was plentiful, the head of the secret society would tell the king that witchcraft was getting out of hand. The king would send members of the society into the villages to deal with it. Terrified of being accused, the women would neglect their duties and hide in the bush, or collect money to pay off society members. After a period of increasingly intolerable unrest, village chiefs would collect a large sum of money and present it to the king, asking him to recall the society. Subsequently, the head of the society received two thirds, and the king kept one third, of the collection. This royal protection racket needs no comment. Radin adds that the secret society was allowed to operate in the villages but not in the king's own town because the resulting unrest might have been turned against him (Nadel 1935: 434-442).

The persistence of magic in complex African societies which had long passed the hunting-gathering stage is explained by its economic usefulness to an upper class. It is advantageous to have the people believe in occult powers, because, by professing to have a special magic more powerful than common witchcraft, the ruling class enjoy prestige and wealth. According to Sharevskaya (1973: 64), with the development of chiefdom and stratified societies, the number of religious practitioners increases, including healers, seers predicting the future, and wizards making amulets.

In some parts of Africa, most witches were female; but *witch doctors,* who combated witchcraft, were usually male. The male role in witchcraft was to suppress its practice and ensure that women did not get out of hand. Male secret societies were concerned with the maintenance of male prestige, the initiation of boys and the subjection of female witches (Parrinder 1954: 131-132). Sharevskaya (1973: 63) notes that in Liberia, among the Kpelle and Mende peoples, adult men were members of secret societies, of which, besides conducting rituals, the chief purpose seemed to be to interfere in economic and family matters and subjugate women and the young. Altogether, it appears that maintenance by men of the pretence that witchcraft takes place gave a pretext for them to keep women subordinate by accusing them of it.

Techniques of convincing

In this section, I give evidence of trickery and imposture, whether intentional or self-deceiving, by religious specialists in recent primal societies.

Owing to economic insecurity regarding food, shelter and health among the Eskimo, fear was the predominant religious emotion. A pantheon of malign nature spirits was believed to lurk in the air, on land and in the sea, and to be joined by resentful souls of the dead. It was of course the *angakok* who had invented and delineated the personalities of these vicious beings, together with the magical spells and taboos by which they were to be kept at bay. By playing on and personifying the people's fears, the *angakok* secured his own position of authority in society (Radin 1938: 51-54). Evidently the benefits were sufficient to outweigh the disadvantage that the shaman himself became an object of fear and hatred.

African rain-makers did not try to secure rain in the middle of a dry season, when it might appear to be needed most, but at times when rain might be expected anyway (Parrinder 1954: 81). An obituary of Modjadjiv, the last rain queen of the Bolobedu of South Africa, appeared in 2001.[1] She would visit shrines and make a libation of beer on the ground, before performance of a rain dance. Latterly, implementation of the Mandela government's policies on water distribution had ensured full wells and watercourses. Her authority had waned, as had income from prophecies.

During a séance, a shaman of the Siberian Chelkan people ran out into the yard, fighting an invisible hostile shaman. When he reappeared, he was covered in blood as evidence of his combat. Later, the intestines of a farm animal, prepared for sausage-making, were found at the scene (Alekseev 1990: 86).

In respect of Asiatic Nanai shamans, Basilov (1990: 27) reports the likely use of assistants to find out particulars about deceased persons whose souls the shaman was supposed to contact for private information subsequently relayed to suspicious relatives.

Lévi-Strauss (1963: 267-270) relates autobiographical information obtained by Franz Boas from a shaman of the Canadian Kwakiutl people, who was skeptical about his own profession. In youth, this person was intrigued by the shamans and eventually was asked to join them. His training was 'a curious mixture of pantomime, prestidigitation and empirical knowledge'. As well as learning about such practical matters as childbirth, he learned sacred songs, how to act out a nervous

[1] *The Times*, 30 June 2001, p.27.

fit, and how to organize spies who would covertly listen to people's conversations and pass on information about the ills of his patients. As in many such societies, illness was believed to result from intrusion of a foreign object into the body. For healing, he learned how to conceal a tuft of down in his mouth, then, while sucking at the patient's body, to bite his tongue or otherwise cause a little bleeding, so that he could produce the tuft with blood on it and show it to the patient and onlookers as the object supposedly extracted from the patient. This remarkable individual did not conceal his skepticism about other shamans, saying that one, in another tribe, was probably just a liar and fake and coveted the property of his patients. Stating that shamans only pretend to catch souls, he added that this other shaman represented to onlookers that a piece of tallow on his hand was a human soul. Lévi-Strauss acknowledges that shamans often cured their patients, and opines that the subject in question did not become a great shaman because he cured patients, but rather was able to cure because he was regarded as a great shaman.

A similar procedure is described by Radin (1938: 147-148) for a Zande witch doctor. Here the witch doctor concealed a sharp object under his fingernail, and, by sleight of hand inserted it into a poultice which would be placed upon the patient's wound. Later the poultice was removed and the foreign object shown to the onlookers. An actual medicine was used to treat the patient, but its importance was kept secret by the witch doctors, because, as the informant said, 'their treatment is very deceitful'.

Harner (1968: 17, 23-24) describes a healing procedure of the Jívaro of Ecuador, which I shall summarize. A shaman's spirit helpers are like darts which can enter people's bodies. Normally they are invisible to lay people, and visible only to shamans when under the influence of *natemä* (the local variety of the hallucinatory drink *ayahuasca,* as discussed in Chapter 10). Illness is caused when a malicious shaman sends a dart, *tsentsak,* into someone's body; but it can be sucked out by a rival shaman. When the curing shaman is ready to suck out the offending *tsentsak,* he prepares in his mouth two *tsentsak,* actually small physical objects. The (physical) *tsentsak* at his lips catches the (supernatural) *tsentsak* sucked out of the patient, and includes its essence in itself. The *tsentsak* at the back of the mouth guards against the sucked-out *tsentsak* getting into the shaman's own body. The shaman shows the

onlookers the first physical *tsentsak,* and lay people believe that this actually is the object sucked out of the patient. To the shamans, it merely contains (the supernatural essence of) the sucked-out *tsentsak.* On this interpretation, the shaman is not strictly deceiving the people. To explain to the onlookers that he had the objects inside his mouth all along would not be helpful: the physical object is the people's evidence that he has accomplished the cure.

In the Jívaro scenario I think we can readily discern Radin's religious formulators at work. The shamans have devised a theory, which they themselves more or less believe, distinguishing an invisible essence from the physical object, in which the former can be incorporated. Production of the physical object is not needed for the shaman to know he has done his task; it is for the benefit of the laity. This is sophisticated theological thinking.[1] However, the shaman has to give evidence of his cure in order to be paid. In the end, production of the physical *tsentsak* is for his own benefit.

The same procedure is described romantically[2] by Sullivan (1994: 39), who tells us: 'Truth-telling in shamanic medical practice requires that the shaman amaze the audience with a startling demonstration of the truth. To communicate truths of this kind, shamans must make available to the naked eye what they see with their clairvoyant penetration of the spirit domain.' Three straightforward misuses of the word 'truth' need no further comment.

In a Manchu folk epic, *The Tale of the Nishan Shamaness,* the father of a sick youth denounces fake shamans who cheat people of their food and are unable to state correctly the time of someone's death. However, he then goes to see the genuine and powerful shamaness of the title, who proves her competence, possessed by a spirit while inhaling incense and beating a tambourine (Baldick 2000: 146-147). This item is of interest in showing folk recognition that some shamans are deceivers.

Ripinsky-Naxon (1993: 21) says it is clear that some shamans have abused their positions for personal gain. In this connection, the Yakut of Siberia made a distinction between 'great', 'middling' and 'mocking' or deceitful shamans.

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[1] The similarity to the justification of images and gestures in Christianity as an aid for the weaker brethren is striking.

[2] Unless indeed he means to be ironical, as Radin (1938: 46) might say.

Summarizing information from Shirokogoroff, Baldick (2000: 136-137) tells us that Tungus shamans developed methods of hypnosis by trial and error. They made sounds by rattling and rustling iron objects, trinkets, bells and mirrors on their costume; effective and ineffective shamans differed partly by their competence in this performance. Drumming and singing hypnotized the patient and treatment was effected by autosuggestion. The shaman induced hallucinations in the audience, and some believed he even flew through the air. When mass hallucination took place, those who did not succumb believed that their own senses were at fault, not that the others were mistaken.

Milieu of belief

In contrast to impersonal, abstract theories about society and religion, Radin's theory has the enormous merit of describing developments in terms of what people do and how people think, taking into account the fact that most people everywhere, given the chance, are keen to secure a personal advantage over their neighbours.

In modern societies of the west and east, the majority of priests and their equivalents are probably not in their position for personal gain, but some are. Some enjoy the status. There are also practical advantages. In monastic orders and some priesthoods one is freed from the need to find and pay for accommodation, seek employment, do boring work, pay tax, buy food and do domestic chores. Even higher education may be paid for by one's religious order. The advantages of not having to manage one's own life on a trivial day-to-day basis are even acknowledged by some.[1]

In primitive and ancient societies, to be relieved, even partially, from the need to secure one's own subsistence must have seemed a huge advantage. However, in hunting-gathering tribal societies it appears that shamans generally have continued to hunt, and it is only with the separation of religious specialists into a priesthood, a leisured class, in a stratified society, that full-scale advantages accrue.

Among recent primal societies also, there have certainly been shamans who were concerned for the welfare of their folk, not only in healing the sick but in the broadest sense. One such, an Amazonian Arakmbut shaman, seems to have been a

[1] Article by Br Kentigern in *The White Rose*, Old St Paul's Church Magazine, Edinburgh, Winter 2003.

wise and remarkable individual (Gray 1997). Living among the Yakut, Sieroszewski was acquainted with a shaman who had 'not only material gain in view but the alleviation of the griefs of his fellow men; ... vocation, ... faith and ... conviction' (Ripinsky-Naxon 1993: 21).

An entire book could probably be constructed from ethnographic accounts of instances of trickery by practitioners of supernatural arts in primal societies. Another could probably be written working out, in one after another ethnographically documented situation, how economic advantage accrued there to a practitioner or member of a caste from the apparent practice of magic or the promotion of popular belief in it. The illustrations are from historical cultures, but the principles for credibility and persistence would have operated just as well in prehistory.

Here, the point of drawing attention to these matters and supporting my assertion with a few specific illustrations above is not to cast all shamans and medicine men as charlatans. It is purely to show how practices concerned with the supernatural could be believed in and why they would persist, without recourse to any hypothesis requiring the reality of the supernatural.

In the twenty-first century, in a democratic country which exports computer programmers to the United States, a population of hundreds of millions, including members of their government, have been enthralled by a religious leader's apparent supernatural ability to produce trinkets out of thin air.[1] If such people can get rich in India today, a smarter than average hominin could have kept his tribe guessing a million years ago.

However, even if potential religious specialists were adept at estimating and playing upon their fellows' credulity, they could not have persuaded non-religious people that supernatural entities existed if the laity had no prior conception of such things or propensity to believe. For example, before priestly religion in service of gods could be accepted, the idea of gods had to have some prior plausibility. If the ordinary people already believed in gods, then a priestly caste, once established, could induce people to believe in new gods or to believe the priestly caste's novel interpretations of old gods. Probably even a lone shaman not fully trusted by his fellow tribesmen would be able to induce people to take seriously his innovations

[1] See information on Sai Baba, on *www.skepticweb.com.*

and reinterpretations concerning the spirit world, as long as they already believed in a spirit world. For example, the religious innovators among the Mehinaku tribe of Brazil (see above) institute new rituals within an existing context of belief and rites.

In prehistory, there had to be a prior substrate of supernaturalist ideas among the generality of people, so that the potential religious specialist had something to work on. Without a lay person's personal experience or the testimony of other laity concerning their numinous feelings, there would be no material for the religious specialist to interpret. This prior substrate is the primordial animatism and later animism whose possible origins are described in Chapters 7 and 8. Animatism and animism are general beliefs and propensities to believe, shared by all humans and not limited to potential religious specialists. This substrate can also be identified as the embryonic form of what in documented primal societies became Radin's *folkloristic background.* I speak of an embryonic or incipient form because the folkloristic background as described by Radin is already well developed, especially where it literally contains folklore, stories and myths. The embryonic form, animatism certainly, and animism possibly, antedated language and therefore genuine folklore.

While Alekseev regards shamanism as unqualifiedly pernicious (see above), it would not have survived for thousands of years if its net effects had been detrimental to society. It has been proposed that a shaman, especially as healer, promotes the well-being of his or her tribespeople. Shamanic healing takes into account not only the patient's physiological symptoms but also relationships within the family and community. As a focal person in the community, the shaman is influential. His or her activities promote cohesion. One could add that a shaman, as thinker, offers a world view which gives a means of understanding the environment and makes sense of misfortunes. The shaman's professed efforts against evil spirits bring confidence to people in the uncertain and often hazardous economic circumstances of their struggle with nature (*cf.* Basilov 1990: 29). Stress impedes recovery; depression weakens the immune system. By healing individuals, promoting good relationships, making sense of the world and fighting on their behalf, the shaman reduces stress and improves the confidence of everyone, with resulting physiological improvements in health and endurance (Money 1996). That the shaman is the one who promotes the belief in evil spirits in the first place is irrelevant. What

matters is that the people believe in his or her powers over the spirits. The uncertainty of survival is itself enough to produce stress; evil spirits serve as an explanation of vicissitudes which themselves are all too real. Personifying the causes of misfortune makes them amenable to combat.

The religious specialist himself or herself had to possess some motivation to take on the role. While self-interest certainly figures strongly, it seems clear that many, probably most, religious specialists in primal societies have had a genuine calling, in that they feel themselves drawn to what they believe is a real supernatural dimension. Much of the rest of this chapter attempts to account for this perceived calling.

Transition from shaman to priest

In order to be able to say anything at all, I use some terms in a broad sense. The word 'shaman', which figures prominently in this chapter and the previous one, strictly refers only to the traditional religious specialist in tribal societies of Siberia, Central Asia and arctic Europe. However, there is widespread agreement that it is an appropriate generic term to designate the religious specialist in tribal societies of North and South America, and even wider afield, in Indo-China, Oceania, Australasia and even, with reservations, Africa (Eliade 1964; La Barre 1970a: 268). Some of the characteristics of circumpolar and Asiatic shamanism are not shared by all the counterparts in other continents, but enough similarities exist.

It has sometimes been said that in Africa possession by spirit beings, in which the subject loses control, is characteristic of trance; while in the classic shamanism of northern Asia, and perhaps the rest of the world, the shaman in trance is said to command the spirits and remain in control. Eliade dismisses possession as rare in shamanism, and Radin states that possession is found only in complex societies with developed cults, as in Africa. According to Hultkrantz (1978: 43-47), a defining characteristic of classic shamanism is the concept of helping spirits. Citing Arbman, he presents what appears to some as possession in Asiatic shamanism as a role play, in which the shaman impersonates the helping spirit. Even if one helping spirit is inside the shaman, the rest are outside. Baldick (2000: 169) strongly disagrees that there is a difference between Africa and the rest of the world. He cites an African seeress who used incense to go into trance 'like her Manchu counterpart', and the

initiation into a possession cult specifically of those who have been ill, as with the Asiatic shamanic illness (see below).

Where societies are simple and unstratified, lacking chiefs or kings and with all members sharing an undifferentiated economic role, the only religious specialists are shamans (Radin 1938). As societies became more complex and stratified, perhaps with specialist economic roles appearing such as potters and smiths, shamans sometimes have survived as before, but in many contexts they took on the role of priest. Priests are religious specialists whose expertise lies in the area of knowing about deities rather than mere spirit beings, composing and preserving myths about them, and knowing how to divine their will and conciliate them using fixed rituals. They are typically approved by, and may even be equated with, the governing authority, and are organized in a group rather than operating as individuals. They conduct ceremonies but do not engage in the ecstatic performances characteristic of shamanism (Basilov 1990: 36-38).

Once a priesthood has been established in a secure economy, as in ancient Egypt, it becomes possible for priests in turn to diversify into ritualists, advisers, theologians and the rest. In many societies possessing an official priesthood, who act as a stabilizing force in society, other unofficial religious specialists have operated in parallel, carrying out cures and divinations or casting spells. However, in such a case they are usually disapproved of or suppressed and referred to as witches or sorcerers rather than shamans (James 1955: 13, 36; Basilov 1990: 33). It is not in the interest of a priestly caste to permit unofficial and unpredictable rival specialists to function in the community.

Shamanism, rooted in hunting and gathering cultures with their egalitarian attitudes and focus on game animals, declined with the development of agriculture, as in Central America (Hultkrantz 1978: 51-52). However, it is possible that a cadre of religious specialists might retain its function without loss of continuity. Through the cultural transition from hunting and gathering to agriculture, they may sometimes have made a parallel transition from shamans to priests. Just as the shaman was a botanical expert for the purpose of securing medicinal and psychoactive materials, he or she may have been the first expert on identifying and growing crops. It has been suggested that the earliest motivation of ancient people to identify cereal grasses may

have come from a more ancient prehistoric use of fungal growths, ergot, found on wild grasses, for the religious purpose of inducing altered states. In time, with the discovery of the food value of cereals, the shamans retained their expertise and exclusivity, now transferred to the new source of subsistence, and transformed themselves into the rain-makers, intermediaries of weather deities, and agricultural divine kings of ancient societies (Ripinsky-Naxon 1993: 185-186).

The transition from shamans to priests will not be pursued further here because, on the assumption that priests develop from shamans, the shaman represents the aboriginal religious specialist. The origin in prehistory of shamans, as the first type of religious specialist, before whom there were none at all, has the principal claim on this chapter.

Nature and inner motivation of the shaman

It has been disputed whether shamanism qualifies as a religion, but this is a matter of definition and will not detain me any more than it does Hultkrantz (1978: 29-31). He summarizes that the central idea of shamanism is for a community to establish contact with a spirit world by means of a specialist intermediary. Four elements constitute the complex: (1) the ideological premise of a spirit world and the possibility of contact with it; (2) the shaman as agent for a community; (3) the shaman's ability or inspiration granted by helping spirits; (4) the ecstatic experiences of the shaman. Eliade (1964: *passim*) emphasizes the characteristics of the other world visited on the ecstatic journey and says comparatively little about the spirits encountered there and in this world. Hultkrantz emphasizes the host of spirits which are believed to exist, from among which the shaman recruits his or her helping spirits. More correctly, from an emic point of view, the helping spirits are said to recruit the shaman (Radin 1938: 135).

Early in this chapter I discussed Radin's discrimination of degrees of religiosity among people, and noted that he identified three types. In fact, as shown in most of his work, the identification can be reduced to two: the religious specialist and the lay person. The middle type, the intermittently religious person, can be subsumed into the laity. Radin also identifies two types of personality, the 'introvert' and the 'extravert'. For an introvert religious ideas can assume great personal significance, while an extrovert is a practical, matter-of-fact person. By and large, lay

people are extroverts and religious specialists are introverts. In stratified, usually agricultural, societies the religious specialist may be an extrovert, because practical rewards in the form of power, prestige and economic security can be obtained from being a member of a priestly caste, and this motivation appeals to practical people. In simpler, unstratified societies there is less competition for the position of religious specialist, because the rewards are not so great. Therefore the introverts who have a personal calling or predisposition to attend to supernatural matters preponderate among the shamans and medicine men of those societies (Radin 1938: 105-109).

Mental abnormality

Shamanic temperament

Mostly on the evidence of Asiatic and American shamanism, it has been widely proposed that shamans manifest one form or another of mental illness or arrested psychological development (La Barre 1970a). They have been called neurotic, psychotic or epileptic. Even Joseph Campbell likened shamanism to 'controlled schizophrenia' (Ripinsky-Naxon 1993: 102). Radin (1938: 108 and *passim*) states that the introvert religious specialist has a 'neurotic-epileptoid' disposition, but does not define what he means or distinguish the two terms of this description.

Strictly, neurosis involves a persistent state of anxiety, which may take many forms. The neurotic maintains contact with reality and is rarely subject to delusions. In contrast, psychosis involves a loss of sense of reality, withdrawal and sometimes hallucinations; schizophrenia is the most widely acknowledged form of psychosis. Modern psychiatry has alternative classifications, and the terminology of *neurosis* and *psychosis* is no longer acceptable to all workers (Frude 1998). Neurosis and psychosis (for the sake of argument I stay with these terms) are psychological conditions manifesting in behaviour and without necessarily any marked physiological basis. In contrast, epilepsy is an unequivocally physiological condition, detectable by instruments such as EEG and often with a clear aetiology in brain abnormalities made visible by x-rays, scans or surgery.

Eliade (1964: xi-xii) claims that it is a mistake to assimilate shamanism to any kind of mental illness, but then (*e.g.*, 1964: 16, 20, 25-26) cites ethnographic

examples which seem to show just the opposite of his claim. For example, a new Yakut shaman became frenzied, unconscious and wounded himself with knives; for Altaians, if a young man suffered epileptic attacks, he must have had a shaman among his ancestors; shamanic candidates among the Araucanians of Chile were sickly or morbidly sensitive and suffered from vertigo.

A number of ethnologists in the early twentieth century hypothesized that people in far northern climates suffered from 'arctic hysteria'. This putative condition results from prolonged hardship, uncertainty, relative solitude (and sensory deprivation) in an inhospitable environment, in which the monotonous days and long nights induce 'cosmic oppression'. A particular example is *Kayakangst,* suffered by the lone hunter when travelling in his canoe. The strong form of this hypothesis further asserts that true shamanism originated among the people of the polar north who were subject to these conditions, and that the shamanism of more southerly peoples such as those of Central Asia is secondary and less intense. Generally, the strength and genuineness of shamanic practice correlates with the degree of neuropathy, and this in turn with proximity to the north pole (La Barre 1970a: 171-175; Eliade 1964: 24; Furst 1994: 9).

Eliade (1964: 24-31) points out that the presence of true shamanism in all climates of the world – with, one may add, no evidence of diffusion from north to south except in the Americas – is sufficient to dismiss the hypothesis that its origin lies in arctic hysteria. Furst (1994: 9) concludes: 'From this alone it follows that this [arctic hysteria] and all attempts to explain the shamanic phenomenon as "mental illness" must be rejected'. This is a *non sequitur*. While the existence of shamanism elsewhere than in the far north eliminates arctic hysteria as the sole ground of shamanism, it does not eliminate the possibility that shamanism arises from other forms of mental instability.

Basilov (1990: 3-5) observes that nineteenth-century ethnologists dismissed shamans as deceivers; but by the early twentieth century the view prevailed that the shaman had a disordered mind. Phrases used by his earlier sources on Asiatic shamanism include: 'neuropathic persons'; 'many were almost hysterical, and some were literally half-insane'; 'the most nervously unstable persons'; 'a nervous, hysterical person, prone to seizures, occasionally an epileptic ... the shamanic séance

itself has much similarity to an hysterical attack'; 'morbid neural organization, a tendency to ecstatic fits'; 'shamanic illness accompanied by fits, fainting spells'; 'a cult of hysteria'; 'socially organized neurosis'.

Hultkrantz (1978: 50) refers to the labile nervous disposition of shamans generally, and says Tungus shamans are recruited from 'neuropathically disposed' families, the pathology manifesting as fits and hysterical attacks. He also cites hysterical phenomena, cramps, convulsions and imitative behaviour among Tungus men. Compulsive echolalia together with coprolalia and exhibitionism comprised the 'olonism' observed among the Tungus by Shirokogoroff (1935: 245-251; La Barre 1970a: 172-174). Some of these involuntary behaviours resemble automatisms associated with psychomotor epilepsy.

According to Alekseev (1990: 60-64), the shamanic gift takes the form of a neuropsychological illness, and a séance may involve falling down, convulsions and foaming at the mouth. On the shamanic journey, not only evil supernatural beings may be encountered but also nightmare landscapes may have to be traversed. When an Altaian shaman journeyed to the underworld to plead with khan Erlik[1], he encountered 'a black stump, ... a black game that the old ones play, ... black tongs, endlessly opening and closing, ... a place that takes the power from great shamans and the head from poor shamans, ... black ravines, ... swarms of black gluttons, ... a boiling black lake, ... pale gluttons with greenish legs, the shore of a blue river, ... a stone palace and the residence of the khan'. In a Manchurian tale of a shamaness, 'she comes to the bank of a river and a lame ferryman takes her across. ... She goes on to two gates, each guarded by two harmful spirits' (Baldick 2000: 146).

Devereux (1961) declares that Ute shamans laboured under 'at least borderline psychotic fantasies'. These included the belief that the shaman's powers might turn against him and he might plead with them in vain. He relates (1961; 1980: 20-21) the case of a Mohave shaman whom he had believed to be completely rational. Then one night, when drunk, the shaman 'poured out frankly psychotic material', which he assented to when sober. A shaman of the Sedang Moi in Malaya had a psychotic episode in which he ran shouting through the village and had to be secured by several men while he tried to fight ghosts. Although shamans were

[1] King or god of the underworld.

expected to have contact with supernatural beings, local people testified that this behaviour was deranged. For Devereux, there are three explanations for these sudden outbursts: (1) spirit possession is real; (2) psychotic episodes can occur out of the blue without a preceding abnormal mental condition; or (3) the subjects had a preexistent psychosis. The last alternative is to be favoured. Much of the time, the subject may appear normal, and a culturally valued function can be carried out by a latent psychotic who has a sound understanding of his or her role.

Radin (1938: 111-129) cites original, in some cases first-hand, accounts of shamanic calling and initiation, to illustrate the mental state of the subjects. An Eskimo apprentice shaman chose for his way of suffering starvation and cold, which were regulated by his wife's father, a master shaman. However, note that the apprentice 'chose' this way of suffering; it was not merely imposed. According to an Arunta informant, evil spirits deprive a prospective medicine man of his senses so that he 'runs about like one crazy' and cannot rest day or night. He is 'repeatedly beaten' by the spirits until he falls unconscious to the ground. Subsequently, he is ill and exhausted. For the Mentawei, a young person who is to become a seer is 'summoned through sickness, dreams or temporary insanity', and malaria is the usual sickness. He promises to become a seer in return for being healed by the spirits. An Amazulu person who is going to become a diviner begins to be 'delicate without having any real disease', particular about food, eating little, and complaining about pains in parts of his body. He 'becomes a house of dreams'. He says: 'I dreamt .... And on waking, one part of my body felt different from other parts; it was no longer alike all over.' For the Ashanti, the realization that a person is to become a priest comes upon him or her unawares in the course of ordinary life or during a religious ceremony, when the person hears a voice or falls down in a fit.

These accounts describe different circumstances, and Radin points out that for some of the complex African and Tahitian societies (not cited above), admission to the cadre of religious specialist is controlled by the existing specialists, and those selected need not always be subject to unusual experiences. Because the rewards of office are greater, 'normal' people are attracted to the priesthood. For the simpler societies, the ranks of the shamans are more nearly composed of self-selecting introverts. While there are apprenticeships in which the novice is trained by an

experienced shaman, the candidate is almost invariably of the 'neurotic-epileptoid' type. In the accounts given above, one can recognize in the feeling of strangeness in parts of the body a quasi-epileptic aural symptom, quite apart from the obvious symptoms of loss of consciousness, cramps (tonus?) and fits.

One issue which strikes the lay reader is that virtually none of the authorities define what they mean by such terms as 'neuropathic', 'hysteric', 'neurotic', 'psychotic', 'epileptic' and the rest. These are technical terms in psychology intended to have specific meanings. There may be a problem with translation, of course, but I suspect that different terms are used to describe the same phenomenon by different observers, and that they are all used with a more or less casual equivalence.

Shamanic calling

What is clear is that many ethnographers have noted the prevalence of a labile and abnormal temperament among shamans. The latter frequently manifest an abnormal temperament by the standards of their own community. They are not necessarily 'insane' by their community's standards, but it is their personal temperament that is unusual or abnormal, and not just their behaviour while shamanizing. Evidence that this is so is given by the manner in which shamans are selected.

The experiences which manifest a shamanic calling take the form of any or all of the following: intense dreams and nightmares, prolonged sickness, desire for solitude, concentration on an inner life, maladjustment to the normal ways of society or to one's gender, a sense of strangeness, abrupt loss of consciousness, convulsions, visual and auditory hallucinations. Some of these manifestations have no connection with the supernatural: the failure to integrate socially in the common way, introversion as such and confusion of gender identity do not indicate the presence of numinous feelings. One suspects that some of those who merely have trouble finding a niche in a tribal society which has very few types of niche, perhaps only two, laity and shamans, choose the latter because in that niche eccentricity is tolerated. They are potential outsiders in an implicitly conformist society in which sociability is enforced (*cf.* Devereux 1980:54-57), but need not have a numinous inclination.

As an example, consider an Uzbek transvestite shaman who was well-adjusted and socially integrated, as described by Basilov (1978: 282-288). This man was sick in his youth and was trained by a shamaness. Throughout adulthood he wore women's clothing, because, as he said, 'I like it'. He liked to sit among the women and swear and gossip like them. Lively and smiling, he walked with a quick mincing gait. He was an accomplished musician, playing and singing at all village celebrations. He had had four wives in succession, who gave birth to two daughters and two sons; one of the latter was continuing his father's musical profession. In addition, the shaman performed the duties of divining and healing.

Transculturally, the calling to become a shaman frequently takes the form of 'shamanic illness'. The subject becomes anxious, moody, withdrawn or physically ill, and may suffer fainting episodes and mumble or sing while asleep. Sometimes the subject resists, but the illness continues until he or she accepts the call and seeks an apprenticeship with an established shaman (Ripinsky-Naxon 1993: 66, 71, 74, 79, 87; Eliade 1964: 27-28; Furst 1994: 6; Radin 1938: 111-129, cited above). Sometimes a physical abnormality is taken to be a sign of shamanic destiny (Eliade 1964: 31-32; Ripinsky-Naxon 1993: 71-72). For a child, I imagine that the awareness of looking different may give rise to a predisposing anxiety. Eliade (1964) gives detailed accounts of shamanic callings, including descriptions of the transcultural dismemberment theme, but these are emic accounts with little or no objective content.

Tradition or temperament

In a widely cited article, Basilov rejects a neuropsychological basis for 'shamanic illness', and adduces evidence from Shirokogoroff (1935) and others. Shirokogoroff is cited by La Barre (1970a) in support of the opposite opinion. I shall summarize three points of Basilov's (1990: 5-10) argument, and then offer a dialogue using Devereux's (1980) contentions in favour of the mental-illness hypothesis to counter the arguments of others.

Firstly, Basilov shows that shamanic illness is not confined to adolescence but has been documented appearing at all ages from six to sixty, sometimes after marriage and children. So it cannot be a neurosis arising from the physiological changes of adolescence. I would add that in tribal communities young people know

what is expected of adulthood and look forward to it; the teenage *Angst* of western societies is unknown (Devereux 1980: 192-194).

Secondly, Basilov's positive contention is that shamanic illness is the result of autosuggestion. He cites evidence from the Ket and Evenk, two Asiatic peoples. Among them, if there had been no new shaman for some time, expectation would grow that a new shaman should soon appear. In a milieu of expectation, some who suspected that they were targeted would begin to manifest signs of shamanic illness. They would be taken ill, stop eating, become withdrawn. Some might even have hysterical attacks or convulsions; some would retire into the wilderness. The people might or might not be convinced, and even those suffering these symptoms might not be accepted as having a genuine call. As time passed and no shaman was identified, a wider circle would come to suspect that they were eligible, and more people would exhibit symptoms of shamanic illness. Eventually, when someone was identified and accepted, the symptoms of the others would quickly abate. Thus, shamanic illness is produced by autosuggestion when the community expects a new shaman.

Thirdly, attacks of fainting and fits are essential components of shamanic ritual. But the shaman has these attacks in accordance with people's expectation. Frequently, even the ecstatic experience is consciously controlled throughout so that the audience witness what they hope for. It is programmed and achieved by autosuggestion (Basilov 1990: 10-11). The professional shaman's everyday unusual behaviour, his or her actual shamanistic performances, and even the illness of the future shaman all conform to a stereotype.

Devereux (1980: 14-15, 20-21) acknowledges that shamans' behaviour conforms to an institutional stereotype, but insists that it remains 'ego-dystonic' (harmful to the individual) and often 'culture-dystonic' (hostile or harmful to the community) as well. When it is believed by the community that a Ute shaman harbours an homunculus inside him, and the shaman believes this too, he merely shares the mistaken belief of the tribe. When a shaman actually experiences the sense of an homunculus inside him, then he is suffering from a pathological delusion, even if it is a culturally patterned one.

Some types of abnormal behaviour have been regarded as an 'ethnic psychosis'. Speaking in tongues in the ancient world was taken to be a divine

madness, but if observed today in a psychiatric ward would be treated as a clinical symptom. In an objective attempt to describe classical or other cultures, this and similar phenomena should be regarded as clinical symptoms of derangement (Devereux 1980: 47). The alternative to this objective diagnosis, as I have stressed before, is either to accept the ethnic view of the reality of the supernatural or to refuse to judge phenomena in a target culture. If we refuse to judge, then we refrain from trying to understand what is really, physiologically, happening to people in the target culture in a way we would never refrain from doing for our own culture.

It has been argued that shamans cannot be deranged because they are useful, indeed pivotal figures, in their societies, as healers in the broadest sense. Astute shamans are tactful and insightful, and try to minimize conflict in the community as well as heal individuals. Their performances bind the community together. Ethnographers have repeatedly noted that shamans are typically more intelligent and learned than the average member of their societies and have much larger vocabularies. They are often the custodians of tribal lore. In South America shamans have extensive knowledge of medicinal plants. Sometimes shamans are physically stronger than the average tribesman and capable of prodigious feats. Even very elderly shamans in trance sometimes engage in prolonged dancing and leaping while wearing heavy costumes. These observations seem to argue against mental deficiency or sickliness (Eliade 1964: 29-31; Furst 1994: 8, 13-14; Siskind 1973: 37-38; Basilov 1990: 17-19; Baldick 2000: 137).

Devereux (1980: 24) points out that the claim that social usefulness, strength or intelligence demonstrates mental health is fallacious. Consider the mathematician Georg Cantor, who alternated between advanced scholarship and psychotic spells in a mental institution (Devereux 1961: 1089). His groundbreaking development of transfinite set theory does not prove that he was not psychotic.

Eliade (1964: 27-31) emphasizes that the shaman has not merely suffered the shamanic illness but has cured himself. From personal experience the shaman understands the mechanism of illness and this allows him to become a healer. The curer is his own first patient. The cure is effected by commencing to shamanize. His inner personal crisis (Ripinsky-Naxon 1993: 71) does not continue but is resolved (Furst 1994: 7).

Firstly, shamanic cures of other people are not by any means always effective. According to a study among the Altaians, recovery was rare. Yet people continued to make expensive sacrifices of livestock to clan spirits as part of the rites to bring healing. In some cases families were brought to ruin (Alekseev 1990: 67, 107).

Secondly, according to Devereux (1980: 17-19), the shaman's cure is not 'real'. Instead, he contends that the shaman provides a 'corrective emotional experience' which repatterns psychological defences without insight into underlying conflict. In the case of the shaman's self-cure which terminates the initiatory illness, the individual's personal conflicts and desires are transformed into culturally conventional ethnic conflicts and ritualistic symptoms, without insight. The shaman is not cured but in remission.

In the case of shamanic illness, Basilov says 'the future shaman would know that the choice of the spirits would be upon him. ... He ... would resist, yet still be internally prepared for the inevitable.' But here I ask: why does one person and not another recognize himself or herself as a future shaman? I suggest that the self-selecting future shaman is likely to be someone who is of a labile, nervous temperament in the first place, one who will most easily be provoked to abnormal behaviour and exhibit it more strikingly than others, so fulfilling the people's expectation.

One must now ask: why does the stereotype consist of those particular behaviours? Basilov (1990: 6-7) says that the necessity of attacks and madness is suggested to the shaman by the people's traditions. 'From remote antiquity' it was known that the person in possession of the spirits should exhibit fainting and inexplicable behaviour. But I would argue that the most probable reason why tradition specifies abnormal behaviour is that, indeed, 'from remote antiquity' the memorable shamans have been people subject to abnormal behaviour – not just because tradition expected it of them but because they were personally disposed to abnormal behaviour. The stereotype was established by a succession of people with an abnormal temperament.

I do not deny the cogency of Basilov's argument regarding tradition and expectation. However, as one must with a view to origins, I try to look behind the

tradition and expectation and see how they could have arisen at a period before there was any tradition.

Cultural relativism

According to Eliade (1964: 14), what is important is the shamanic technique and its theory as transmitted by initiation, not the personal or temperamental 'point of departure' for obtaining shamanic powers. This view does not represent an emphasis by Eliade on the function of shamanism in a society, but rather his positive valuation of shamanic practices as a technique of attaining what he clearly believes to be genuine ecstasy: that is, an altered state in which genuine knowledge of a wider reality than the everyday world becomes accessible. In accordance with the principles of this inquiry, of course I must reject this view. Further, in seeking the origins of shamanic activity, one must investigate the condition of those who practise it. At the time of its origins, there could not have been any shamanic initiation or transmission of technique, because at its origins there was no precedent. From this point of view, the condition of the individual subject in bringing about the phenomena becomes paramount.

Like Eliade, Ripinsky-Naxon denies the importance of western categories of mental illness in determining the status of the shaman. Even so, he cites opinion that the only difference between shamanic trance and an epileptic seizure is that the shaman can enter the state at will (1993: 88; *cf.* Eliade 1964: 29; Basilov 1990: 10). Since epileptic seizures may manifest as purely motor phenomena without psychic auras, this is strictly not true. He says (1993: 68): 'western cultures do not possess equivalent metaphors (existential wisdom as opposed to didactic knowledge) to pass diagnostic judgements on phenomena adaptive in cultural contexts'. This is of course an expression of cultural relativism, allowing only an emic approach to the study. In contrast, I believe, if we are to understand objectively why these phenomena come about, we must make judgements based upon wider information which can be brought to bear from outside target cultures.

Devereux (1980: 14-16, 20, 64) will not tolerate cultural relativism in assessing the shaman psychiatrically. In his view the shaman is a severe neurotic or a psychotic in temporary remission. Given the importance of reality acceptance in psychiatric diagnosis, the shaman's distorted sense of reality alone is enough to mark

him or her as at least borderline psychotic. Some potential hysterics become shamans; some remain 'private' neurotics.

It is part of Devereux's scheme that people have an idiosyncratic or personal unconscious and an ethnic unconscious. When people's conflicts are in the ethnic sphere – that is, it seems to me, they have trouble adjusting in society – they develop behaviours which society provides for those who cannot conform. Every culture provides a conventional mode of behaviour, sometimes ritualized, for those who are potentially unconventional. In nineteenth-century Europe, hysteria was the 'ethnic type neurosis', the conventional mode of being mentally disturbed. People learned 'the right way to be a hysteric', and when diagnosed played the part as expected. Individuals suffering from ethnic disorders shape their symptoms according to society's expectation of 'how the insane behave'. In Malaya, running amok was the conventional mode of insanity; among the Vikings, the berserk rage (Devereux 1980: 17, 35, 42, 44). In each society people know how they are expected to behave if they lose control – and it is different for different societies. Shamans therefore do not invent their symptoms, because a set of conventionalized symptoms are provided by their culture. But the fact that shamanic behaviour is conventionalized does not make it normal, any more than conventionalized hysterical behaviour in nineteenth-century Europe was normal.

As a psychoanalyst, Devereux attributes mental disorder to mostly unconscious psychological conflicts, but it is not necessary to follow his aetiology all the way to retrieve insights from his analysis. The point is to note that one who chooses to become a religious specialist is of a less balanced or more disordered temperament, whatever the underlying causes, than the practical person in his community.

Hallucinogens

The underestimation by earlier workers of the role of hallucinogens in Old World shamanism may have facilitated the assumption that practitioners were mentally ill. Psychotomimetic drugs may induce some behaviours which could be misinterpreted as symptoms of psychopathology.

In the region of classic shamanism, Siberia, use of the fly agaric mushroom to induce ecstatic states has been documented for the Koryak, Kamchadal, Chukchi, Ostyak, Samoyed, Yukaghir, Yakut, Vogul and Ugrians (Harner 1973a: xii-xiv; Wasson 1968: 233-304). Harner relates a description by the explorer Jochelson of shamanic activity under its influence: great animation alternating with deep depression, rocking from side to side, talking quietly, then eyes dilating, convulsive gesticulation, conversation with invisible entities. It is easy to see how the intoxicated shaman could be construed as a psychotic. Certainly the experience of 'another reality' and hence reduced acceptance of normal reality – an indication of psychosis – falls into this category.

In Mexico and Central and South America, hallucinogens play a more explicit part in shamanic practice than elsewhere. Apprenticeship for Amazonian shamans often includes the ingestion of large quantities of tobacco and *ayahuasca,* which induces encounters with helping spirits. Apprentices experience what their masters have trained them to expect (Langdon 1979: 77-78; Weiss 1973: 43; Furst 1994: 17). Thus are they prepared for their future role, in which they will continue to use drugs for divination and healing. The behaviour of Native American shamans and laity while under the influence of *ayahuasca,* peyote or mushrooms seems to be relatively placid. Participants in *ayahuasca* rituals may sit round quietly having their own private visions between bouts of vomiting. While there may be chanting and dancing, the leaping and shrieks often described for Asiatic shamans are absent (*cf.* Furst 1972: 181; Gray 1997; Reichel-Dolmatoff 1975; 1972; Harner 1973a).

In all cases, however, the introvert's predisposition to the role of religious specialist is a personal characteristic rather than an effect of drugs, as the ingestion of drugs appears to be usually a consequence of selection for shamanic training rather than its cause.

A psychodynamic theory

In Appendix 11A, I summarize and criticize the Freudian psychodynamic theory of La Barre (1970a) explaining the religious inclinations of both layman and shaman.

Conclusion

Altogether there are two hypotheses: the shaman as (1) master, deceiver and exploiter or as (2) victim, neurotic, psychotic or epileptic. Yet one person can embody characters from both (1) and (2).

A variety of opinions at a more fundamental level than the anthropological can be discerned among the references I have used. Some, like Radin, Devereux, La Barre and Alekseev, have no doubt that the shaman is *merely* mentally ill or epileptic, has no insight into a wider reality, and wields a pernicious influence over the tribesmen who believe in his special powers. Others, such as Furst and Sullivan, and new-age followers of these real scholars, take what I call a romantic view. They believe in a wider reality as perceived by the shaman, and reject the claim of mental illness or *mere* epilepsy. For them the shaman has insight and is a positive influence in his or her community. Others again, among whom I would include Eliade and Ripinsky-Naxon, seem in some passages to accept the epileptic or even mental-illness hypothesis, but are prepared to believe that mastery of those conditions can bring insight and indeed allow the subject access to a wider reality than the normal.

The conclusion to be drawn is that how one interprets the phenomena of shamanism depends largely on one's metaphysical position concerning the scope of reality. As explained in Chapters 1 and 2, I do not think that all metaphysical positions are equally rational. I side with Radin and Alekseev. I part company with Devereux and La Barre because I think their *a priori* psychoanalytic constructs are as 'metaphysical', in a pejorative sense, as the shaman's spirits.

I think the evidence for epilepsy at a clinical level (such as would lead to a positive diagnosis in the west) among Asiatic shamans is obvious. The widespread occurrence of feelings of strangeness, fainting and fits is undeniable. However, epilepsy at a clinical level is certainly not a universal prerequisite. As discussed in Chapter 5, the numinous sense of presence – manifested in shamanism by the helping spirits – appears to be a subclinical epileptic or quasi-epileptic phenomenon. Even this is not a prerequisite for becoming a shaman. Individuals who have trouble finding a niche in the community may be drawn to shamanism because it is the only niche available for a mere eccentric.

One is drawn back to Radin's identification of the introvert in primitive societies in which most people are extrovert practical men and women. The reason for introversion, an interest in the inner life of dreams, may vary, but will often include the tendency to numinous feelings associated with unusual temporal-lobe neural activity. In Chapter 5, I set out the corroborated hypothesis that among human beings there is a continuum of degrees of susceptibility to epileptiform activity centred on the deep structures of the temporal lobes, ranging from virtually none at all to clinical temporal-lobe epilepsy with generalized seizures. I propose that Radin's introverts are, broadly, at the middle and sometimes high end of the scale, and his extroverts at the lower, mild end. His intermittently religious type falls somewhere toward the lower end but with some mild susceptibility. The great majority of people fall within the lower reaches of the scale.

Those with marked susceptibility feel a calling to become religious specialists. This explains why shamans in simple societies have so often been reported as exhibiting what are fairly obvious clinical epileptic symptoms. But they are extreme cases. I stress that even definitely *sub*clinical transient and only occasional epileptiform activity may produce numinous feelings sufficient to induce a person to become a religious specialist. If 'neuropathy' has been reported less for tribal religious specialists in Africa than in Eurasia, the reason is that African tribal societies are more organized than the hunting cultures of the northern hemisphere, so that 'normal' people more commonly compete for the role.

Consider the physiological explanation which I espouse, that numinous experience is quasi-epileptic. Then one can reinterpret the central contention of Eliade's (1964) and Furst's (1994) view of shamans that they 'heal' themselves from their shamanic illness by learning to control their ecstatic predispositions. Take into account Basilov's (1990: 11, 29) point that as soon as a shaman lost control of his visions he would become a 'neuropath'. One arrives at the conclusion that some shamans learn to control – to direct or transform? – their subjectively numinous and *objectively epileptic* experiences. If this interpretation is correct, the phenomenon is remarkable. It is worthy of study, at an individual level, to elucidate how shamans accomplish this neurological feat.

Too often one reads and writes: 'The shaman does *x*'. What shaman? All there have ever been are individual shamans, who were human organisms each with its own peculiarities. They were not mere instances of a constant Platonic form of a shaman. Drawing freely on Eliade and other theorists, I have generalized the shamanic phenomenon in a quest to make sense of it in as few words as possible. I am only too aware not only that I have passed over differences in behaviours between societies but also that I have been guilty of diminishing the significance of the individuals who generated this phenomenon.

Dating

Shamans

Basilov outlines his view of the origins of shamanism as follows. In prehistory, people came to believe in spirits. The idea that spirits controlled the environment had a debilitating effect on human confidence, so humans interposed a protection against spirits. They took to believing that certain people could control the spirits, and these were the first shamans (Basilov 1990: 29-32). I am unconvinced that people in general felt a need for protection and invented shamans. I should think it more likely that prospective shamans invented the idea that they could control spirits and communicated it to the rest of the community. Earlier, people had come to believe in spirit beings and ghosts because of the animatist tendency and animist world-views described in Chapters 7 and 8.

Alekseev (1990: 74, 77) alludes to a 'preshamanic cult' of the Sayan-Altai people, and states that shamans first appeared among South Siberians in the first millennium CE. It is not clear whether he means that the cult in question preceded any shamanism or that it represented an interlude between an earlier, possibly primordial shamanism and the recent documented shamanic culture. In any case, the worldwide evidence that some form of shamanism preceded any other type of religion is convincing, if not overwhelming.

Among the Jívaro of Ecuador, one in four men considered himself to be a shaman (Harner 1968: 17). In one Sharanahua village in Peru, three out of twenty-five men were shamans (Siskind 1973: 31). Of Chukchi men in eastern Siberia, again one man in four was a shaman, prompting Basilov (1990: 30) to raise the question

whether at one time everyone was a shaman. It is noteworthy that some Amazonian Indians, including the Jívaro, have community ceremonies in which all adult males drink *ayahuasca* (Reichel-Dolmatoff 1975; 1972; Harner 1968), and that the Chukchi are among the peoples alleged by early travellers to be addicted to the fly agaric (Wasson 1968: 233-304). Availability of hallucinogens democratizes attainability of trance. Hultkrantz (1978: 34-35), discussing evidence for and against a shamanism open to all, concludes with Eliade that an aboriginal shamanism limited to professionals is more likely.

In prehistory, in any given geographical area, it is possible that there was a stage lasting hundreds of years when everyone shamanized, followed by a stage when only a few shamans did, or no one at all, for hundreds of years more, followed by repetitions of these stages. One would not be able to tell from archaeology.

Recognizable shamanism is widely believed to have begun in or before the Upper Palaeolithic (Basilov 1990: 30; La Barre 1972: 270-273). The cave paintings of western Europe are considered as evidence by many (Dickson 1990). The fact that many of the painted chambers are remote from the surface and difficult of access indicates that those who ventured there had a very strong motivation. They did not inhabit the deep chambers, and no food was to be obtained there. One is left probably with a magical, religious or ceremonial motivation. The animal depictions suggest hunting magic. To some workers the shapes resembling entoptic forms suggest altered states of consciousness, perhaps resulting from sensory deprivation occasioned by the darkness of the caves themselves (Bahn 1998: 240-242). However, Hodgson (2000: 867) reports phosphene-like motifs in the art of non-shamanic cultures. Such representations may sometimes be mere geometrical shapes which interested the painters. One does not have to suppose that Euclid was a shaman, even if some think that his predecessor Pythagoras inherited that calling.

Given that in every society there are religious leaders and laity (Radin 1938), it is likely that the religious motivation was articulated by specialists who broadly conformed to the type of shamans. The advent of recognizable shamanism, at least in western Europe, can therefore be placed at around 30,000 years ago, the date of the oldest cave paintings (Chauvet et al. 2001: 9-11, 122-123; Conard and Uerpmann 2000). Alleged evidence of earlier cult practice, such as the once famous Palaeolithic

bear cult dating from up to 75,000 years ago, has been reevaluated in the light of modern understanding of cave taphonomy and is generally dismissed (Kurtén 1976; M. Pacher, pers. comm.).

Proto-shamans

Before there were shamans, I suspect that there were proto-shamans among the humans and prehumans who preceded the *Homo sapiens* people of the Upper Palaeolithic. I am confident that shamanism did not spring into the world, with all its characteristics as observed in recent societies, fully formed. Long before any cult or organized beliefs existed, there will have been humans or prehumans whose behavioural repertoire did not yet exemplify, but did prefigure, some, and at first only some, of the characteristics of recognizable shamans.

Our ancestors of the Lower Palaeolithic, who were *Homo ergaster, Homo erectus* and *Homo heidelbergensis,* must have possessed mental capabilities at the very least equivalent to those of chimpanzees. As the human brain increased in size over hundreds of thousands of years, it makes sense to suppose that the complexity of human mentality increased. The diversity of mental abilities and predilections from one individual to another should have increased similarly.

Firstly, chimpanzees show signs of knowing which plants are beneficial in the event of various illnesses. In early *Homo* communities some individuals would have been more observant than others. Some may have acquired special expertise in the identification of plants for medicinal use. Some would have become more expert than others in ways of applying plant material to the skin to treat wounds and in mixing leaves, stems and roots from a variety of plants for medicinal ingestion. In a practical way, these first botanists would have been the first healers. One has only to read accounts of chimpanzee interactions in the wild and in zoo situations where communities have formed, as at Arnhem, to perceive that speech is not required for the sort of behaviour envisaged (Chapter 6).

Secondly, as discussed in Chapter 7, Guthrie has shown that the tendency to look out for animate creatures, and especially conspecifics, in the environment is found in all but the lowest animals. Anthropomorphism should therefore date from the advent of the first *Homo.* It does not require speech. The numinous frisson

familiar to most of us today I have hypothesized to be the subjective aspect of quasi-epileptic microseizures in limbic structures deep in the temporal lobes (Chapter 5). Whether chimpanzees experience such frissons one does not know. The capacity to have such feelings, comparable to ours, may conceivably depend on attainment of a threshold brain size. I would guess that late *Homo erectus,* with an intracranial volume of around 900 cubic centimetres, two thirds of the mean for modern *Homo sapiens*, probably had a brain sufficiently similar to ours to be able to suffer temporo-limbic microseizures and thus experience such feelings as a sense of strangeness, *déjà vu,* vertigo and a sense of presence. Some individuals more than others will have been subject to these experiences. They could have manifested, among other things, as an abnormal sensitiveness to the possible presence of other creatures in the environment. This characteristic could even appear useful to a hunting and gathering community surrounded by wild beasts and hostile neighbours.

All higher animals seek their own survival and advantage over their conspecifics. Chimpanzees appear to have a theory of mind. They look out for a chance to secure advantage, whether to get food or to mate, to outwit a higher-ranking male or female, or to become an alpha or dominant male or female who is in a position to enjoy the best share of food or to mate frequently. Early humans will have been no different.

Imagine a community on the brink of animatism (Chapter 7), in which alertness to possible hostile presences and the occasional frisson of a sensed presence was precipitating the idea of elusive or invisible hostile beings. Individual early humans who appeared to be able to sense such beings may have secured an advantage over their fellows by emphasizing their special ability to detect the presences and ward them off. If the community had speech, the process of imposing upon their fellows would have been even easier. In later times, when there was language and not only animatism but also animism (Chapter 8), then recognizable shamanism could develop.

CHAPTER 12

CONCLUSION

Theory

Summary

In Chapter 1, I outlined the programme of this investigation, defining religion as behaviour connected with an apparent supernatural realm of being and proposing that religion is not one thing but a collection of elements, each of which could have a separate origin. In Chapter 2, the rationalist basis and guiding principles were set out.

In Chapters 3, 4 and 5, I made a case for identification of a neural basis of numinous feelings – the feeling that one is in the presence of a supernatural being or that something uncanny (supernatural) is happening. A major conclusion is the hypothesis that, broadly, religiosity or the propensity to have numinous experiences can be correlated with the degree of susceptibility to quasi-epileptic activity in the limbic system and temporal lobes, particularly the amygdala. There is a continuum of such susceptibility from virtually none at all to clinical temporal-lobe epilepsy.

In Chapter 6, I tried to elucidate the baseline mentality from which our pre-religious ancestors set out on their unwitting development of supernatural belief. I then turned to five specific elements of religion: spirit beings or daemons; souls or ghosts; life after death leading to other worlds; other worlds leading to heaven; religious specialists or shamans.

In Chapter 7, my spirit guides were Guthrie (1993) and Marrett (1914). Here I tried to show how an assumption that daemons exist results from the need for alertness to the presence of animate beings in our vicinity. In Chapter 8, Tylor (1871) was my psychopomp. Here the conception of a separable soul was attributed to the continued appearances of the dead in dreams and to out-of-the-body experiences. In Chapters 9 and 10, an entire host assisted, two of the pivotal angels being Baillie (1934) and La Barre (1972). They enabled me to argue that the idea of heaven is derived from the experience of expanded, transformed or different worlds under the influence of sensory deprivation, rhythmic activities or ingested substances which disturb normal processes of neurotransmission. In Chapter 11, my helping spirit was

Radin (1938). Here I argued that religious specialists generally seek to maintain advantage for themselves in the community by means of professional magical techniques and fear. Making use of the conclusions of Chapters 3, 4 and 5, I further argued that certain types of individual are drawn to the profession of the supernatural owing to an unusual propensity for numinous feelings, which are associated with high susceptibility to subclinical and indeed clinical epileptic activity in the brain.

In this way the origin of five major elements of religion – arguably *the* five central and almost universal elements – is accounted for in naturalistic terms. For one who can accept the gist of the arguments presented here, I believe I have shown that there is no need for the objective existence of the supernatural to explain why human beings have come to believe that there are supernatural phenomena.

I follow Radin's (1938: 145) view that a major reason for the *persistence* of belief is social: that the maintenance of supernaturalist beliefs is to the advantage of religious specialists. But the *origin* of the very idea that there is anything supernatural is not a social matter. Origins are to be sought in the psychological – ultimately neurological – propensities of the human mind.

I do not seek to disparage prehistoric and ancient human beings for having developed 'irrational' beliefs. In fact, the belief in daemons, souls, heaven and shamans is, I think, perfectly rational. These beliefs, regarded as theories, make sense of the phenomena. It is only in our age, when copious comparative information is available about a variety of cultures and when the objective mechanisms of the human brain are being successfully investigated, that a thesis such as the present one has become possible.

Sequence

Every known religion is made up of more than one religious element. Extant shamanism has at least four: the beliefs in souls and in daemons, the belief in another world, and the role of a religious specialist. On the perspective of the pre-religious behaviour of apes and of the vast timescale of prehistory, it becomes implausible that religion sprang into existence as a fully formed complex of several elements such as extant shamanism.

The elements of religion, having distinct origins, must have come into being in a definite sequence. For example, sacrifice, a religious element not discussed here, only makes sense in a context in which there are supernatural beings to be placated. Ancestral souls or divinities are not required: mere spirit beings or daemons, *genii loci* and personifications of nature, would be enough. Sacrifice therefore must postdate the origins of animatism, certainly, and possibly animism and theism. Throughout this document I use the words 'animatism' and 'animism' as technical terms with distinct meanings.

Animatism grows out of the animal tendency to alertness and personification. No archaeological evidence indicates its presence or absence. One can only infer or guess, and my guess is that members of the species *Homo erectus* and *Homo heidelbergensis* were sufficiently like us to have the notion that invisible beings lurked in their neighbourhood. Animatism therefore could have been in place a million years ago, and at any rate well before 100,000 years ago.

In Chapter 8 I suggested that animism, the belief in souls, ghosts and ancestral spirits, probably required language for articulation, and therefore assigned its origin to *Homo sapiens.* The earliest 'anatomically modern' *Homo sapiens* remains date from about 160,000 years ago in East Africa (Clark *et al.* 2003: 747). On grounds too extensive to discuss here, I suspect that their Eurasian contemporaries, the Neanderthals, also had speech.

Burial is a sign that the corpse was valued. Paradoxically perhaps, it is probably also a sign that the living associated it with something which survived, a soul. This is very speculative of course, but burial can therefore be viewed as possible archaeological evidence of animism. The earliest burials are alleged to be from at least 90,000 years ago at Skhul and Qafzeh in Israel, where they have been dated by electron spin resonance (ESR) methods (Mellars 1996: 5, 380). These early dates have recently been challenged, with a proposed date around 35,000 years ago (Krantz 2001: 465). If accepted, this would return the Qafzeh and Skhul remains to the dates accepted (Coles and Higgs 1969: 358-370) before ESR dating was applied in the 1980s. The next earliest dates for burial are from 75,000 years ago in France, and represent Neanderthals, not modern people. However, all the alleged Neanderthal burials themselves have been challenged as not being intentional burials

at all; but this is a matter of controversy (Mellars 1996: 375-381). Indeed, there is ongoing controversy about the degree of distinctiveness of 'anatomically modern' *Homo sapiens* and the Neanderthals anatomically and culturally. At any rate, the burials of the Upper Palaeolithic are generally undisputed, so that one can presume that animism was in place by about 30,000 years ago.

As discussed in Chapters 10 and 11, the cave paintings and movable figurines of western Europe are widely taken to be evidence of a religious dimension to the life of Upper Palaeolithic people. The existence of another world, inhabited by spirit animals, may be indicated by the paintings of game animals such as bison and horse. Some think that the other world was believed to be behind those rock walls on which naturally occurring animal-like contours appeared, inducing the people to paint outlines, features and hair to bring them to life (*cf.* Bahn 1998: 246). Whether this is so or not, we are not yet witnessing a belief in genuine heaven. That had to await social and intellectual as well as experiential developments after about 1000 BCE.

The Palaeolithic cave paintings can be seen as indicative of a primitive but recognizable shamanism (Stringer and McKie 1996: 184-185). Especially convincing are the therianthropic figures, the most famous of which is the 'dancing sorcerer' at Les Trois Frères, an apparent depiction of a man dressed in animal skins and wearing a horned mask (Bahn 1998: 237; Bahn and Vertut 1988: 142, 158, 186-187). The evidence is not conclusive, but it is suggestive, that people impersonated animals for some ritual purpose. Schlesier (2001) reports opinion that fully developed shamanism existed in Siberia by 23,000 years ago, with the suggestion that perforated 'Venus' figurines found at Mal'ta were objects attached to shamans' costumes. Perhaps in Palaeolithic times everyone shamanized; perhaps it was the profession only of Radin's early 'neurotic-epileptic'. Archaeology does not elucidate this question. The depiction at Les Trois Frères dates from 14,000 years ago, but at some sites the paintings and movable art are much earlier. So a recognizable shamanism can perhaps be dated to 30,000 years ago, along with animism. This combination makes sense, since fully developed shamanism involves the journey of the shaman's soul. Recognizable shamanism can only follow or be concomitant with animism; it cannot precede it.

The idea of another world is not necessary for a recognizable shamanism, since the shaman's soul can journey through *this* world. However, the differentiation of another world from this one becomes a possibility once a specialist psychic traveller is in place to describe and differentiate it. The idea of another world therefore can be expected to follow or be concomitant with a developed shamanism, but is unlikely to precede it.

A *proto-shaman,* as discussed in Chapter 11, need merely be a specialist in the use of healing plants or appear to possess an enhanced awareness of spirit beings. Proto-shamanism could have been in place for hundreds of thousands of years, and I suspect it dates from the era of *Homo erectus* or *Homo heidelbergensis,* if not, in even more rudimentary form, from long before.

Above I have given dates where possible, and some dates relate to archaeological evidence. The absence of evidence at earlier dates does not prove that a given religious element was not in place much earlier than I have suggested. For example, there could have been earlier cave art and burials than have so far been discovered. The evidence could have been obliterated by rock falls and other sedimentary processes or, less probably, given the extensive explorations of the twentieth century, the caves and other sites in which it lies may not yet have been found.

Transcultural religious elements

Prehistoric revelation

In Chapters 1 and 11 I referred to the theory of a divine revelation in prehistory, as espoused by Lang and Schmidt and researched by the latter's Viennese *Kulturkreis* school. A primitive revelation would explain the prevalence of religious ideas in every known society, and especially account for similarities. However, the central tenet, the existence of belief in supreme beings or old high gods, appears to be limited to religious formulators.

If there had been a primitive revelation, one might expect considerable cross-cultural resemblances between the geographically separate conceptions of supreme beings and the creation myths in which they often figure. But they are disparate. For example, the Uitoto of California had a sophisticated creation story involving

creation out of nothing. This story has a supreme being, but the created world itself is only a 'phantasm' at first (Radin 1938: 164-165), not the physical world of heaven and earth found in Genesis and related stories. The Uitoto myth is clearly a poetical speculation by a religious thinker from a culture completely foreign to Old World 'revelation' or tradition. Rather than believe that creation myths as they have survived are degenerated and diversified from a single correct revealed story, it is much more plausible that religious thinkers in disparate cultures invented them as part of their efforts to make sense of their world.

Diffusion of shamanic culture

There is no complex of religious beliefs held universally. On the other hand, there are a variety of conceptions which are very widespread, both in the Old World and in the Americas (Hultkrantz 1978: 32, 53). These are apparently very ancient elements of shamanism, discussed further below. However, in each culture where some of these widespread conceptions are found, they exist side by side with others which are evidently local. For example, the creation story of the Yanomamo of Amazonia held that all people, including Europeans, were descended from the indigenous ancestors of the Yanomamo, and the foreigners represented a degenerate branch of the lineage (Ripinsky-Naxon 1993: 118).

Among the transcultural conceptions found in shamanistic cultures and others are the tripartite world, with sky, middle earth and underworld, and the cosmic serpent. Such conceptions require explanation. An explanation may be found in a common inheritance from a Mesolithic or even Palaeolithic *Ur-Kultur* which included a strong shamanic component (La Barre 1972: 270-273, 278).

That these shared conceptions are archetypes held within the group mind, racial memory or in the human psyche is untenable on present understanding of how memory works. No biological means have been discovered whereby memories as such can be stored from generation to generation. Adaptations can be transmitted genetically; but adaptations, even in the form of instincts, are not memories or ideas. Instincts are unlearned, inherited propensities to behave in certain ways, not ideas that can be expressed in speech or art. It may be, however, that the human brain, given certain types of stimulus, for example from psychoactive substances, automatically produces fixed and potentially predictable ideas, owing to stimulation

of the same target complex of neural circuits. The apparent occurrence of snake and jaguar motifs cross-culturally, to both natives and westerners, during *ayahuasca* intoxication may be an example (Harner 1973b; Naranjo 1973; Ravenswood 1999); although it is not clear that these motifs really occur to westerners who have not been primed to expect them.

So wide a geographical occurrence of similar conceptions would seem to make diffusion from a single source unlikely. Even so, one has to take into account the almost incredible conservatism of human beings in prehistoric times. Material culture changed little through the hundreds of thousands of years of the Lower and Middle Palaeolithic, and the conservatism of artistic culture in the Upper Palaeolithic of Europe is almost equally astonishing from a modern western point of view. The oldest cave paintings of south-west France appear on the scene at Chauvet, as if from a tradition evidently already fully formed, 31,000 years ago. Yet the most recent comparable paintings date to only 13,000 years ago at Niaux and El Castillo, with many others in between (Chauvet et al. 2001: 11, 122). All the achievements of humanity in the time since 13,000 years ago – agriculture, cities, writing, empires, mathematics, space travel – have come about in less time than elapsed between the eras of the earliest and latest Palaeolithic cave paintings. It appears that early Europeans conserved their artistic and perhaps religious culture almost unchanged for many generations, to a degree almost incomprehensible to us.

It is therefore just possible – I hesitate to say 'credible' – that some of the so-called 'archetypal' religious ideas originated with the bands of *Homo sapiens* who drifted out of Africa some time before 50,000 years ago and spread over the rest of the Old World, replacing the indigenous but sparse Neanderthal populations in the Middle East and Europe and *Homo erectus* populations in the Far East. Such diffusion of ideas is possible if the *Homo sapiens* migration and replacement actually took place, a matter about which there is continuing controversy. The migration out of Africa is generally dated to 120,000 years ago or before (Stringer and McKie 1996). However, the stone tool culture of the Middle East, where the ex-African *Homo sapiens* newcomers settled, remains Middle Palaeolithic (Mousterian) until about 45,000 years ago (Mellars 1996: 419). This is the same tool culture as in Europe, where the Neanderthals were the sole occupants. Evidence for the ancestors

of modern people coming out of Africa before this period exists not in the form of cultural remains but in the form of their fossil skeletons at Qafzeh and Skhul.

Whether anatomically modern people from Africa arrived in the Middle East early or late, there is no clear evidence of their presence farther north, west or east before 45,000 years ago[1]. An Upper Palaeolithic stone tool culture is generally believed to be associated with anatomically modern people. Its earliest appearance is 45,000 years ago in the Middle East, 43,000 years ago in the Altaian region, 33,000-27,000 years ago in Mongolia and 23,000 years ago in China (Brantingham et al. 2001: 735-736, 745), possibly indicating the migration of its practitioners. Along with the stone tool culture, new soft cultural traits, such as art forms, rituals or a system (or mere collection) of beliefs, could have been developed during the residence of *Homo sapiens* in the Middle East. When they spread more widely, the soft cultural propensities could have been carried with them to Europe, northern Asia and beyond. Such a diffusion would explain the relative homogeneity of the putative prehistoric shamanic *Ur-Kultur* across the Old World north of Africa, and might account for the differences in forms of 'shamanism' which some workers detect between Africa and the rest of the Old World.

Numinous experience

A number of statements about the connections of dreaming, hallucinations, sensory deprivation, rhythmic dance and drumming and controlled breathing, psychoactive drugs, epilepsy, numinous experience and a sense of presence can be given with a fair degree of confidence (Table 12.1). In my view, the overlap and similarities of types of experience occuring in a variety of circumstances give the key to the whole phenomenon of the numinous – that is, of experience in which one is apparently encountering the supernatural.

[1] It is sometimes stated that Australia was colonized by 60,000 years ago, but the later date of 40,000 years BP is supported by absolute dating (Jones 1989: 760, 773).

1. Normal human beings have several periods of rapid eye movement sleep with dreaming every night.
2. If normal people are deprived of sleep for several days, they often begin to hallucinate.
3. In experimental conditions of sensory deprivation (e.g., acoustic chamber, isolation tank), most humans are liable to enter altered states of consciousness, sometimes with out-of-the-body experiences or a sense of presence, the latter often malign.
4. In isolated arctic, cold and seaborne situations, relative sensory deprivation is often sufficient to cause an altered state, often with a sense of presence, usually benign.
5. In 'nightmares', particularly in sleep paralysis, any human may experience a sense of presence, usually malign, and often interpreted as supernatural (incubus etc.).
6. Some humans have numinous experiences, such as fear and a sense of presence (usually malign), when exposed to fluctuating magnetic fields, either in an experimental setting, in the home or in allegedly haunted houses.
7. Some humans experience apparent out-of-the-body travel sponanteously, particularly in bodily trauma (accidents, operations, near death, etc.).
8. Drug-induced states, accessible to anyone, may include apparent out-of-the-body travel, apparently meeting spirit beings, seeing and hearing more than in a normal state, intense anxiety or the relief of anxiety, and even bliss and rapture: the experiences vary according to drug type and dose, set and setting.
9. Shamans in trance may experience any of apparent out-of-the-body travel, seeing and hearing more than in a normal state, a sense of presence, apparently meeting spirit beings, apparently being possessed by a spirit being, and even bliss and rapture.
10. Shamans in many cultures take hallucinatory or other psychoactive drugs or use rhythmic drumming, dancing, chanting or controlled breathing to induce or facilitate trance.
11. In many cultures, potential shamans are identified as such by others and often by themselves because they are of a 'neurotic-epileptic' temperament: neurotic in that they may be maladjusted to ordinary social relations, epileptic in that they may be subject to psychic auras, absences or even *grand mal* seizures.
12. Epileptic psychic auras sometimes but not necessarily followed by a clinical seizure may include such experiences as déjà vu and out-of-the-body travel.
13. Epileptic clinical seizures may sometimes but rarely mediate bliss and rapture.

Table 12.1

In Chapter 3, I said that there is a numinous quality to dreams in themselves. If they are frightening, the fear that they bring is generally, I suggest, a numinous fear. If they are pleasant, they make us wish to prolong them or return to them. Remembered dreams often have a nostalgic or haunting quality. If one is deprived of dreaming by being deprived of sleep, then one begins to hallucinate. The process of hallucination, at least in this case – and possibly also in the case of intoxication or sensory deprivation – can be interpreted as an intrusion of a form of dreaming into waking life. When given the opportunity, as in sensory deprivation, when the sense

organs are no longer delivering enough data to define the boundaries of (external) reality, the mind-brain fills the void by generating its own experiences (*cf.* La Barre 1970a: 54-57).

Consider not merely enhanced sensory input or vague feelings, but positive and detailed hallucinatory experiences such as falling, flight, being approached by someone, encounters with distant people and other beings such as saints and spirit animals. The similarity with dreams is too great to be discounted. Whether it substitutes its own creations for perception, as in dreaming, or distorts perception, as in synaesthesia, or both in full-blown hallucination, the brain is generating numinous experience by abnormal reduced activity in some circuits or excessive activity in others. According to Devereux (1980: 207), dreams are the product of the mind when it withdraws from reality, and uninhibitedly acting out dreams would virtually be schizophrenic behaviour. This is an opinion which, with different terminology, goes back at least to Kant (La Barre 1970a: 67). The proposition that positive hallucination is an intrusion of dreaming into waking life deserves further attention, but I shall desist from this line of inquiry in the interest of finishing.

Not all hallucination takes place when the senses are in abeyance. Many hallucinogens enhance sensory data, so that the experience of seeing, hearing and the rest is heightened and sometimes the senses merge into one another: for example, plain colours become luminous and one sees sounds and hears shapes. It is as if the normal processes of filtering for meaning and importance are reduced, permitting more sensory data to reach consciousness. The sensory data is not raw, because, by the time it reaches consciousness, it has already been interpreted; but more of it gets through. Filtering processes seem to develop gradually through learning from birth onwards.[1]

One of the characteristics of the numinous is that it appears instinct with value. Out-of-the-body travel and near-death encounters are not dismissed by the subjects as dreams. They often become life-changing events. The same aura of significance surrounds mystical experience – people are not casual about having a

[1] Hyperactive children lack inhibition of a natural impulse to act on stimulus (Kewley 1999: 180-183). From personal observation (N=2, only!) I derive the impression that some do not discriminate sensory data as effectively as normal children: their eyes dart constantly around the room; they cannot attend to only one thing because they are bombarded with sensory stimuli.

sense of oneness with the universe, and they may attribute value to both large and small things in life, because even the small things are part of the universe. In epileptic auras, sometimes everyday events assume intense significance. It is the temporal lobes and limbic system, the hippocampus and above all the amygdala, alert to what is important for survival, that assign significance. It is as if, in certain conditions, relevant nuclei of these structures are activated continuously, so that everything seems important.

A parsimonious neural explanation of experience will, I think, expect similar subjective experience to be mediated by processes in the same or closely related neural circuits. So when one has waking hallucinations because of lack of sleep, the circuits mediating the hallucinations are from the set of those which typically are active during normal REM sleep. When enhanced perception in separate modalities or synaesthesia occurs, the same blocking circuits are ineffective as in a baby. When significance is attached to everything by the mystic, the near-death-experiencer and the epileptic, it is the same limbic circuits that are hyperactive in all three.

The fact that apparently supernatural experiences can arise from epilepsy, given that epilepsy is associated with structural abnormalities in the brain, or from psychoactives, given that they distort the normal processes of neuotransmission which have evolved to serve us and other animals for survival in the waking state, is a *prima facie* indication that those experiences are non-veridical.

Consider an epileptic person who spontaneously and involuntarily has begun to have trance experiences because he or she has a lesion in the brain resulting from a severe fall. Consider a western 'psychonaut' who seeks trance by ingesting an hallucinogen. Consider a shaman who enters trance by rhythmic drumming and controlled breathing. If there are broad similarities of experience across the three states, then we can assume that broadly the same sets of neural circuits are correspondingly active or inactive. Then, if it is unlikely that the epileptic sufferer is having genuine supernatural experiences simply as a result of accidental brain injury, one has no greater reason to believe that the other people's similar experiences during intentionally induced states are genuinely supernatural.

When the dreamer, the shaman, the mystic, the epileptic or the drug taker have similar experiences, similar things are going on in their brains. The simple and

admittedly simplistic conclusion is that in numinous experience certain parts of the brain are processing abnormally. Normal processing is associated with effective waking consciousness, such as obtains when one sits round the campfire enjoying food and conversation. Of course abnormal processing does not imply dysfunctional processing. A shaman who has the ability to enter trance may possess, even out of trance, sharpened perception of his or her surroundings, having access to subliminal visual and auditory cues, and consequently be able to trace the movements of a lost person, detect a liar or interpret the condition of a sick patient (Basilov 1990: 18-21).

One must distinguish between the general hypothesis that abnormal neural activity accounts for numinous experience, and specific hypotheses that a particular numinous experience is accounted for by a particular abnormal neural activity. An example of the latter is that the sense of presence is accounted for by right-hemisphere intrusions into the left hemisphere's sense of self. The latter hypothesis could be shown to be untenable if, for instance, radically commisurotomized patients, with no connection between the cerebral cortices above brainstem level,[1] still had a sense of presence. That would not, however, invalidate the more general hypothesis that a sense of presence was produced by *some* kind of abnormal activity. Nor of course would it invalidate the even more general hypothesis that abnormal neural activity of various kinds accounts for all kinds of numinous experience.

The above paragraph may seem to contain rather many caveats, but I stress again that the technology for investigating brain activity and consequently the new science of *neurotheology* (d'Aquili and Newberg 1999: 12, 15-16) are in their infancy.

Conclusion

Theory

What I have sought is to demonstrate that a plausible theory of religious origins is possible without recourse to the reality of the supernatural. This has been attempted before, but previous theories account for only some of the phenomena. By identifying separate elements of religion, it is possible to seek separate origins, and to bring to bear existing theories to account for individual elements. Older approaches

[1] In fact, when the corpus callosum is resected, the commissures are still left intact in, I believe, all cases.

have to be updated to take into account new findings about the neural substrate of numinous experience. I have demonstrated that a theory is possible by constructing one. A viable theory would have the following characteristics.

1. The explanation adequately accounts for the phenomena.
2. The explanation is parsimonious. (i) It does not require the existence of the supernatural. (ii) It does not require the existence of any other types of entity not accepted by common sense and mainstream science, such as extraterrestrial aliens.
3. The explanation is consistent with available evidence from relevant fields (neurology, archaeology, anthropology, primatology, etc).

Clearly, because only some of the religious elements are accounted for, my explanation is incomplete. But, for the elements which are covered, I suggest the explanation given is adequate, and that points 2. and 3. are also fulfilled.

Some parts of this theory are speculative. However, many others are testable or *falsifiable* in the Popperian sense (Chapter 2, and point 3. above), particularly the neurological aspects. Some proposals about the appearance of certain religious elements are falsifiable by archaeology. For example, if unequivocal human burials were found from half a million years ago, one would have to rethink the dating of the origin of animism, although the way in which it came about would not have to be rethought. If documents unequivocally describing a heavenly afterlife came to light, say in Europe, dating from 2000 BCE, one would have to rethink not only the dating of this concept, but also how it came about, since the concept would antecede the developments which I have proposed for its origin. Other proposals may be falsifiable by ethnology. Are there aspects of a primal conception of the soul, found universally, that are not accounted for by my neo-Tylorian case? If there are, can they be accounted for by some addition to the theory (one hopes, not too *ad hoc*)? Is there any phenomenon in the shamanic performance that indicates objectively verifiable paranormal powers? For instance, claims have been made that South American shamans knew of distant events before they happened (Kensinger 1973: 12). Knowledge of distant events has of course also been attributed to Indian yogis (Yogananda 1950), along with bilocation and many other feats, some shared with Christian saints.

It is in the nature of science to have alternative theories or at least competitive hypotheses. While I think it is substantially correct, I do not claim that the theory offered here is the only one that could account for the origins of religion. It is simply what I am able to offer within present constraints.

One may note with satisfaction the absence of *system* and of *abstractions.* This is no 'unified field theory' of religion. I make no pretence of having identified a primordial complex of behaviour (such as the totemism beloved of the early twentieth century), universal stages of religion which societies historically go through, or connections with structures in society or psychological archetypes. On a common-sense basis, I merely identify the simplest form of religion as animatism, observe that some elements could not have preceded others which are presupposed, note that in societies with a variety of occupations a cadre of religious specialists could become separate from the rest, and use suggestive results from neurological research to account for some apparently supernatural visitations.

Consequences

Putting aside dishonesty, wishful thinking and the desire not to offend, I personally feel obliged to take seriously the conclusion that numinous experience, whether mystical or of the 'debased' ghostly type, is not a genuine perception of reality.

That certain experiences arise from unusual or even abnormal brain activity is not itself a guarantee that the experiences are non-veridical. While I have no desire to believe in ghosts and daemons, I would like to believe, with admirable scholars such as Eliade and Furst, that the entranced shaman and the Christian mystic have access to a wider and more exciting reality than we normally perceive. Sadly, there is no independent, publicly sharable and measurable evidence that the other worlds are real. It is much more plausible that they are sublime creations of our dreams.

Whether *value* or *significance* attaches to numinous experience – even numinous experience arising from brain injury – is not decidable on the basis of anything I have covered. The question is beyond my present scope.

APPENDIX 3A

Experiences of the sensed presence

Case 3

This second case from James (1902: 61) contains the commonly reported element of dread.

Quite early in the night I was awakened ... I felt as if I had been aroused intentionally .... I then turned on my side to go to sleep again, and immediately felt a consciousness of a presence in the room, and singular to state, it was not the consciousness of a live person, but of a spiritual presence.... I felt also at the same time a strong feeling of superstitious dread, as if something strange and fearful were about to happen.

Case 4

David Hufford (1982) describes a great many cases of what he calls the Old Hag experience. Hufford is careful to analyse the phenomena and circumstances of each of his cases and to distinguish types of experience. Not all cases of the sensed presence are cases of the Old Hag, and, given Hufford's classification of primary and secondary features of the Old Hag, not all cases of that are cases of the sensed presence (see below and Hufford 1982: 25). However, it seems clear that full-featured cases of the Old Hag are cases of the sensed presence. The full-featured Old Hag or entity experience is, I should think, the most frightening type of apparently supernatural encounter.

I give extracts from a few of Hufford's extended quotations. The first case here is of a female graduate student who had not heard of the experience happening to anyone else (Hufford 1982: 40-42).

Well, I woke up, or I thought I woke up. And I was conscious of the room anyway. I was looking around the room and I felt like there was a man next to me with his arm underneath my back ... . And his head was on my shoulder. And I was so scared when I first was conscious of it .... I couldn't look around to see who it was .... And then he would just kind of move closer to me. And so I tried that about three times. And each time I did it, it felt like he'd grip my arm and sort of move a little closer.... I remembered really distinctly his smell. Like he smelled like someone's been working out in the fields or something. All sweaty and kind of dusty.

And then I tried to scream .... But I couldn't get any kind of sound out. And then I don't remember what happened in between, but then he was on top of me, and I tried to look up to see who it was or something. ... I could get my head up but I couldn't move past my chest. Like it was pressing down on my chest. And so every time I would bend my head, I could just see this – it looked like a white mask. Like a big white mask. And it kind of had a funny face on it. And it had black dots on it and a red kind of crooked mouth.... It was a really funny, ghastly looking kind of mask! ... And I kept trying to pull up, and finally I just sort of, felt sort of released, you know. And I ... could sit up, and I got the feeling there was nobody there.

... It gave me a bad feeling. Like I felt bad the whole rest of the day. Sort of a scared feeling, because I was so scared.

Case 5

A woman in Toronto had the following experiences (Hufford 1982: 49).

I too have heard the footsteps and the strangling scene but just as I was about to be strangled I came out of it. When we lived in Toronto I had the experience at least 3 times in one year. I could hear the footsteps coming down the hall and each time they came closer to my bedroom until finally the almost strangling. After we moved to Quebec... the footsteps came up the stairs – I haven't had the strangling here but a form with a very bright light in front of it. I've been paralysed during this experience. ... It's a dreadful, frightening experience and I sometimes am almost afraid to go to sleep especially if I'm overtired as I know I'm more apt to experience it then.

This person experienced the attacks less frequently after she began taking antidepressants.

Case 6

This case from Hufford (1982: 32-37) is described in a long dialogue. The subject was a teenager at the time of the frightening experiences, which occurred on five consecutive nights at his grandparents' house on the east coast of Canada. I shall quote just some essential passages.

One night everything was dark as usual, and I heard footsteps on the stairs. ... I could look out and see the stairway, and I saw a figure coming up the stairs and turned at the top of the stairway. And it was almost all white and glowing. It had a hat on. It was dressed as an elderly lady. ... I watched this figure come right down the hall and came right into the room. ... I couldn't move or say anything. ... When it got into the room it sat down on the floor and it looked to me like an elephant of all things! Just a blob, but white. ... I knew I wasn't dreaming. I thought I was dreaming but I knew I wasn't dreaming! And I broke out into a sweat and was just forced onto the bed. ... closed my eyes, opened them again, it was still there. ... Practically got no sleep that night.

... I was so petrified during the daytime that I asked my grandmother to sleep with me that night. ... And she came in and slept with me, and the same thing happened! ... the steps came up over the stairway and I knew that in a minute there was going to be something in the room again. And I looked out over her [his grandmother] and sure enough ... there was the white blob again.

This happened several times after that until I ... went down to my aunt's house [to stay the rest of his holiday].

On questioning, the subject related:

When the figure came into the room I closed my eyes in utter fear and the next time I looked up the figure seemed to sink onto the floor – because it was definitely standing right next to my bed for a ... couple of seconds .... (Twice) I saw it walk into the room. But what I would do after that was I would close my eyes after I

heard the footsteps coming and I would count them. ... And I knew when it would reach the top because it was a different sound.

... I definitely didn't fall asleep. And each of the other times that it happened with my grandmother in the bed, I actually waited for this to happen. ... I knew it would happen the third night. And I knew it would happen the fourth night. And I knew it would happen the fifth night.

Case 7

A young man gave Hufford a detailed account, which I shall abridge, of a recurrent terrifying episode.

I have had this experience probably around a dozen times .... But on occasion that I have slept on my back, that has been the only time that this has occurred.

... This is one thing, the fear, the terror *that I would experience ... because of the presence of someone else in the room. And me just being afraid to move or budge whatsoever. And my eyes could move and no other part. But I was sometimes afraid even to move my eyes ... for fear of the person, object or whatever it is, either being there or ... just looking down at me where I couldn't see him, or the few times – I think only two or three times I actually saw the image of a person.*

When I did see it, it was a person ... it was very dark and shadowy ... Just like a silhouette. But it did have, like, a ... very transparent, like dark, cape ... that just hung down .... The face wasn't a clear face, but what it did have – and what scared me and made me not want to move – was two very dark eyes. You know, piercing eyes looking at me ....

... It wasn't just like two dots. They were eyes, and it sent a chill up my spine – tingling ... shivering type of sensation.... I felt this hardness on my chest ... pressure was there. ... I would think I was breathless.

On one occasion when his brother was also in the room at night, the brother observed that he was breathing heavily and had his eyes wide open and staring. When the brother spoke to him, the subject moved his head and the experience ceased; nothing was there. The subject continues:

I did sense it coming into the room ... like footfalls .... Smoothly, gliding even though there were footfalls .... About the second or third time ... the person or object did actually come along side me, and I was afraid to look up at it. I was afraid to look into those eyes, you know. ... I did twice try to jump out [of bed] and I couldn't.

... I'm six one, and it seemed that if I jumped out of bed it would still be above me – closer to seven feet. It was tall. *And I was paralysed.*

... in college.... This was one of the times when I saw the person right at the foot of my bed ... right behind the foot of my bed. There is a cupboard which can be open sometimes, and I can see darkness. And a couple of times I thought that was it ... But it wasn't. ... But I knew when it was there! ... I could see the shadow of the veil, and everything.

... I couldn't see any other features other than very plain, but very piercing, dark eyes. And it seemed like it had a hat or something, and long hair. ... Brown hair, not black. ... Like everything else was dark except brown hair ... So this all made me think that I was actually seeing something instead of just a silhouette.

The first time it happened I think I was just falling asleep. ... And I opened my eyes. And I looked around. And someone was there ....

... It's like I opened my eyes and everything was OK. And then, "No, it isn't," you know. "Everything is not OK!" ...Sometimes I just try and scare it away, but I couldn't, you know. And I tried psyching it out or something by just looking at it, but I couldn't because those things are staring back at me too hard!

... I can recall a lot of dreams, you know .... But this is nothing like that. This is something where I opened my eyes and I saw it, ... I sensed its presence and I didn't look, but I knew it was there .... It was something that was real and if I could have been able to go over and tackle it or something—I wanted to do that, but I found myself unable. If I could reach out it would be tangible.

This account conveys strikingly the daemonic dread or fear of the supernatural discussed by Otto. However, of interest is the fact that the subject wanted to scare away and even tackle his assailant. Here, as with the first case from James, we find that the experient senses the assailant is not all-powerful. There is none of the awe or abasement in the presence of the mighty which Otto associates with the mystical or religious experience proper. I think it is clear that we are dealing with a quite different kind of feeling.

Case 8

The accounts given by Budden are unfortunately not detailed and are not given in the first person, which means that they are difficult to assess. However, this and the following three cases (Budden 1994: 13-20) more or less conform to the sensed presence.

A woman had a history of paranormal events since childhood. When she moved to a flat in Brighton, she began at night to see an old man at the bottom of the bed, wearing a scarf and looking at her. Apparently an old man had lived there previously. In her house the electric kettle would go on and off by itself. Tape recordings would come out blank or with extra sounds on them which those present had not heard during the recording. The woman suffered from multiple allergies.

Case 9

A woman saw a female child sitting on the pillow beside her. The child's hands and feet were unclear and faded into the bedclothes. It had a pudding-basin haircut and staring all-black button eyes. The eyes looked evil and it exuded a sense of 'unpredictable menace'. The experient referred to it as 'the troll'. The apparition occurred several times. Her husband did not see it, but averred that if the unpleasant aspects of his wife's nature could be embodied, then the result would fit the description she gave him of the troll. The woman herself had often sat on the bed exactly where the troll usually appeared.

Case 10

At Dulwich the subject slept on a futon on the floor. One night a dark figure shuffled into the room. It touched her on the forehead with one of its long, thin fingers. She then had the sensation of falling over backwards, although she was already supine.

Case 11

The most striking case is of a thirteen-year-old girl who grew up within sight of Alexandra Palace in London. Sent to bed, she suddenly had a strong feeling of a presence in the room, which made her hide under the bedclothes. When she peered out, a blue light appeared on the reflector of an electric fire on the wall, then faded. Then 'luminous raindrops' fell from a circle of light on the ceiling and formed into a large humanoid figure. The luminous blue giant hovered just below the ceiling, then tilted and rotated, as if it were under remote control, until it seemed to be looking through the curtains. A booming voice said in her head, 'What is the power?' She said after a while, 'That's Ally Pally!' referring to the radio transmitter. After more speech, a circle of light appeared on the floor, with a dome above it. A city with people, cars and buildings appeared inside the dome, and she was fascinated by the people going about their business in this city. Some of these appearances, including the city, occurred on further occasions. The girl, like many of Budden's subjects, grew to adulthood suffering from multiple allergies.

The city in the dome is reminiscent of a feature experienced by a patient of Ramachandran (1998: 108-111). Following damage to her visual cortex, the patient had a scotoma or gap in the lower left of her visual field. This area, and only this area, would be filled at times with cartoon figures, admittedly stationary ones, forming a waking hallucination beyond her control. There is no suggestion that Budden's subject had brain damage; it is just the symptom that is similar, and perhaps the mechanism.

Case 12

In Evans' (1984) fascinating and comprehensive survey, among the cases which conform to a fairly simple type of the sensed presence is one in which a woman felt she had been possessed (Evans 1984: 132-133). Before and after the encounter, she had 'trances' and was often ill. At the moment of possession, she felt that 'he insinuated himself from the left side of her body'. The direction may be significant (Chapter 5).

Case 13

At a haunted house in London a young man, who later became an admiral, had 'a curious experience' in 1894 (MacKenzie 1982: 95).

I woke up with the knowledge that someone was about, and I felt strangely afraid. The door opened and someone came in and stood by my bed. I can see it very clearly in my mind's eye now, standing there for a short time, then turning towards the window at the back, whither it went and disappeared. A large dog appeared to

run across the room at that time .... It is a curious feeling, that of intense fear – so intense that one can't even speak.

Case 14

In the same house a woman had the following experience, after hearing noises from below in the house (MacKenzie 1982: 96).

Two o'clock had just ceased to chime ... when I heard another sound which I first thought was a little breeze in the trees outside. ... I became aware that it was no breeze that I heard but the sound of skirts, as though some woman was moving swiftly along the passage outside my room. Right up to my door she came, then paused, as though she was listening outside.

Promptly, and with shame I say it, under the bedclothes went my head! ... when I ventured to peep out again it was only for a second, an indescribable feeling of terror which I could not conquer impelled me to cover it up again. Five times I did this! At the fifth nervous peep, I distinctly saw a dim figure standing in the corner by the door. The head was veiled, I merely saw the outline of a woman's figure, dressed in pale grey, standing there in the dim moonlight. The next instance [sic] it had vanished without a sound.

Case 15

In Westphalia a person had this encounter (Green and McCreery 1975: 13).

I was awakened from sleep by my left shoulder being shaken, it seemed to me quite roughly. I sat up in bed. The room was dark but I could just see that somebody was standing at the foot of the bed. ... I waited for the visitor to speak, and while I did so the figure became increasingly visible; it was a woman, hatless and with dark hair, and not anyone I recognized. Up to that time I still thought it was an ordinary person, but then the figure seemed to become gradually illuminated by an internal glow. It was not a glow as bright as when a hand is held round an electric bulb, and the illumination was yellow, rather like a luminous clock-dial.

The features became quite clearly visible, the face seemed to be smiling, and I could see the outline of the arms. ... She moved slowly forward, her hand extended at arm's length as though with the intention of shaking my left shoulder again. To move forward, she came round the bed as a tangible person would have done.

Suddenly, I became very frightened and tried to switch on the main light, which was operated by a cord hanging down the wall behind my head, while at the same time moving away to my right to avoid the approaching figure. ... I groped about desperately with my left hand behind my head but could not find the cord. ... As soon as the light came on, the figure disappeared. The bedroom door was, as usual, shut.

Case 16

Green and McCreery (1975: 127) report this fascinating case.

My wife and I were in bed; my eyes suddenly became aware of someone moving about the bedroom. I saw a person walking around the bedroom as though it was looking for something. I tried to shout and to jump out of bed, but no noise came from my voice and no response came from my legs or body. My eyes were still watching this person when suddenly it turned face towards me and I realized that I was face to face with my own double. It then walked towards me and climbed on to my physical body and quickly wormed itself into me.

Case 17

Another apparition of the subject's own self, a double, is related in Green and McCreery (1975: 76).

I was prescribed a certain drug to be taken three times a day. ... On the third day I felt so dreadful that I wondered whether I would take any more. ... I was lying in bed, knowing I was there, quite comfortably, when I suddenly saw myself sitting on my bedside chair, dressed in a frock discarded quite a year before. I did not speak at all but myself in the chair told me that if I wished to recover I should stop taking the tablets at once. ... My chair self ... finally persuaded me to stop them immediately and tell the doctor, and then she disappeared.

She stopped the tablets, the doctor agreed and prescribed something else; she recovered quickly.

... the picture of myself sitting by my bed ... and talking to me is as vivid as it was then. I should mention that there was no question whatsoever of delirium at any time.

Case 18

In this case from Green and McCreery (1975: 70), the subject is not immediately afraid.

One night ... I woke up, quite naturally, and saw a tall man standing close to the side of the bed. I was not *still dreaming. I saw the large bay window, the street-lamp opposite, the furniture in the room, and the man. His face was long, melancholy, and slightly moustached. He wore a check overcoat and a trilby hat. The overcoat had a wide belt at the waist. ...*

Suddenly, I was afraid, and I screamed and screamed, waking my husband in a fright. As I was comforted, the man vanished. ... I have dreamed ever since I can remember, and no one ever came so close to me with such clear, breathing *reality. I have never forgotten exactly how the man looked at me.*

Case 19

As well as the more frightening cases, some accounts raise an eyebrow, if not a smile. Budden (1994: 35) recounts a woman's apparently waking experience.

... [she] saw three fairies with big oval sparkling wings, space helmets like goldfish bowls, computer buttons on their chests, silvery streamers hanging from their shoulders and lasers mounted on their pointed pixie hats. They arrived in a

spaceship the size of a small car with ski-runners underneath. They spoke to her about Jesus, whom they knew well, and left with a mince pie sticking to the end of their silvery green pointed arms.

I would assume that the fairies were not really there. Budden tells us that the subject lived on top of three geological fault lines and had three large radio masts on local hills about 750 metres away. The significance of these circumstances are discussed in Chapters 3 and 5.

Case 20

Evans (1984: 181-182) gives a baffling case, in which the subject, working at his garage in the small hours of the morning, saw a little old man with long white hair. He was wearing a one-piece metallic suit with a medallion. When he spoke, it seemed as if the sound came from all around and his words were, 'From beyond all time, I am.' He stepped back, became a ball of light and floated away. The subject had earlier had an abduction experience, and the aliens whom he met then made similar portentous utterances.

Case 21

Not all episodes of the sensed presence involve fear, although my own brief survey suggests that that most do. I shall give a few cases which not only lack the element of dread but are instead associated with positive affect.

The same informant as in the frightening Case 1 (Chapter 3) provided James (1902: 60) with an episode of a beneficent presence.

There was not a mere consciousness of something there, but fused in the central happiness of it, a startling awareness of some ineffable good. Not vague either, not like the emotional effect of some poem, or scene, or blossom, or music, but the sure knowledge of the close presence of a sort of mighty person, and after it went, the memory persisted as the one perception of reality. Everything else might be a dream, but not that.

The informant did not attribute the presence to God, although James thinks that would have been a natural assumption.

Case 22

Evans (1984: 71-72, 167) cites this and the next three cases, which exemplify benign presences.

A mountaineer six thousand metres up in the Himalaya suddenly came upon two friends from schooldays. Both had been killed in a motor accident more than ten years earlier.

Case 23

On a lone flight in 1932, the pilot on encountering difficulties experienced the helpful presence of several companions, including her deceased father and an old school friend who had died when she was fourteen.

Case 24

Crossing the frozen mountains of South Georgia in the early twentieth century, after a perilous voyage from Antarctica, the explorer Shackleton and his companions felt that there was an extra man with them.

Case 25

Another mountaineer, Frank Smythe, climbing alone on Everest in 1933, was so certain that he had a companion that he offered him a piece of Kendal mint cake, but there was no one there. At times he felt that there was a companion above him with a rope, who would help if he got into difficulties.

Case 26

Beardsworth relates numerous accounts of presences, voices, touches, visions and other types of encounter with what the subject takes to be an external sentient being. Nearly all his cases are benign, and after relating two unpleasant experiences, he says (1977: 2) that encounters were comforting much more often. This and the next two cases are taken from his compendium (1977: 1, 121-122).

At the height of the panic, when I didn't know what to do, I was conscious of, not a voice or a presence in recognizable form, but a live certainty as if there was an 'I' 'present' outside me and yet directed at me personally.

Case 27

I was walking along a long, lonely country road by myself, worried sick and in near despair. Then came the experience. It lasted about twenty minutes – I sensed a presence, on my right, keeping level with me as I went along. A mental message was conveyed in my mind; the sense of it being: 'Don't worry; it will all turn out all right.'

Case 28

Twice in Egypt I had a sense of overpowering evil ... Both times it was the seeing awareness of a malign presence so tangible that it was endowed with something like shape. The effect was to make my limbs rigid and induce profuse sweating.

Case 29

As an example of a baffling encounter, the following men-in-black visitation (Evans 1994: 144) is too good not to reproduce.

[A young married couple] ... had men-in-black visitors, a strange couple, male and female, who wore old-fashioned clothes. The man sat on the sofa, pawing and fondling the woman, and asked if he was doing it right. They did not take the drinks set out for them. While the husband was out of the room, the man asked the wife if she had any nude photographs of herself. Then, on the way out, the man stood up, but did not move. The woman seemed unable to walk round him. She said,

'Please move him, I can't move him myself.' Then abruptly the man left, followed by the woman.

The subjects thought the visitors might have been robots, for reasons which may be apparent.

APPENDIX 3B

Psychical hypotheses of the sensed presence

MacKenzie (1982: 28) cites five hypotheses debated by the Society for Psychical Research in 1956 concerning the nature of apparitions, which include cases of the sensed presence.

1. The Gurney hypothesis: apparitions are hallucinations. However, this hypothesis adds that the hallucinations are caused in the percipient by telepathy from the appearer. I have not had access to the original material, and without it I find the intention unclear. The appearer has to exist in order to cause the hallucinations, but if the appearer exists then the sensations are not strictly hallucinatory, since their object exists. One suspects that the appearer is intended to be a living person, who projects telepathically so as to be sensed in some form by the percipient.
2. The Tyrrell hypothesis: apparitions are idea-patterns produced by the percipient's subconscious, with or without the cooperative assistance of the appearer's subconscious.
3. The Myers-Price-Johnson theory: apparitions are etheric images created currently or in the past by some mental act. If 'etheric' means 'astral', then this theory accepts the reality of supernatural, in that the *astral plane* with its *astral bodies* are concepts unknown to generally accepted science. If 'etheric' refers to the nineteenth-century physical concept of the *ether* as a universal substrate which permits matter to be located and forces to operate, then one has to take account of the discarding of that concept from physics since the early twentieth century. However, if one wishes to maintain this hypothesis, one can always imagine that there could be some other means of generating latent images in a physical medium, say, at a quantum level. These images would be latent in that only certain individuals in certain circumstances would see them, unlike normal physical images on screens or photographs which are visible to anyone given suitable lighting. On this hypothesis, it would seem that the images are actually there outside the percipient's own mind, but the object which they represent is not actually there. The images do not originate in the percipient's own mind. They are not the same as an image on a screen, because when looking at a screen, we do not assume that the people we see there are actually in the screen; we know we are looking at an image. In most cases, when a person sees an apparition, he or she assumes that the object is there and not that a projection of some kind of image is occurring. A closer analogy than a screen image would be a very convincing three-dimensional hologram such as we enjoy in *Star Trek: Voyager*. Such cases would be illusion, perhaps, rather than hallucination.
4. The occultist theory: apparitions are the astral or etheric bodies of the appearers, with clothing and accessories created *ad hoc*. Presumably the appearer creates clothing so as to appear recognizably and with appropriate decency.
5. The spiritualist theory: apparitions are the spirits of the departed.

For my purpose, to find the origins of religious elements without recourse to the actuality of anything supernatural, I have to dispense immediately with hypotheses 4 and 5. I do not say that they are not correct, although I do not think they

are. I say only that, in the present context, it would be a distraction to consider hypotheses which demand that reality.

The Myers-Price-Johnson theory requires that people be able, in some circumstances, to detect images latent in physical media such as walls and floors. These images were imprinted or projected there by mental acts of other people. For example, when one sees a ghost one is seeing an image, generally a moving, three-dimensional image, of someone who imprinted it, perhaps centuries earlier, in the physical objects in the given location. The theory therefore requires human abilities to imprint and to detect in ways unknown to physical science. To be sure, the mechanism is not in principle unknowable or uninvestigable, but it remains unknown a century after Myers. Accepting this theory, we would be accepting the reality of the paranormal, though not, I think, of the supernatural.

The Tyrrell hypothesis that apparitions should be idea-patterns produced by the percipient's subconscious does not require the actuality of the supernatural or paranormal. However, as formulated above, the Tyrrell hypothesis allows for paranormal (*e.g.,* telepathic), if not supernatural (*e.g.,* astral), interaction between the percipient and the appearer. If we drop this paranormal addition and confine the creation of the apparition to activity of the percipient's own subconscious mind, we have a reasonable hypothesis for the rationalist to pursue.

Similarly, the Gurney hypothesis that apparitions are hallucinations is one that can be pursued, provided that one rejects the paranormal additions regarding telepathy from the appearer. Without these additions, hypotheses 1 and 2 become practically identical.

Myers (quoted in MacKenzie 1982: 16) offers an hypothesis which accounts for the 'vague and meaningless' behaviour of ghosts and apparitions in general. Not uniquely of course, he proposes that phantasms of a living person are projected by that living person in the course of dreaming. The dreaming context explains the odd, dream-like behaviour, but on this hypothesis it is not the subject's dreaming that produces the odd behaviour: it is the dreaming of the other person who appears to the subject. Similarly, but more curiously, phantasms of the dead are produced by the dead person dreaming. The dead person still exists in some way, and can dream. In dreaming he or she projects the phantasm perceived by the subject. This explains the commonly reported lack of response by ghosts to the context or to the actions of the percipient.

I do not know whether Myers' hypothesis has been elaborated by later psychical researchers, but in positing survival after death it certainly requires the reality of the supernatural. For this reason I do not take it further.

APPENDIX 3C

A psychoanalytic hypothesis explaining nightmares

While Hufford (1982) distinguishes the Old Hag from incubus and succubus encounters, the similarities are clear, in that in all cases an intruder approaches and oppresses the victim. The difference seems to be that incubus and succubus episodes have an explicit sexual content. The incubus is supposed to be a male entity which comes upon a female subject, while the succubus is a female entity which comes upon a male subject. On etymological grounds, we should expect the succubus to lie under the subject, but it seems still to oppress the victim from above. Evans (1984: 296) notes that in the Old Hag there is no correlation between the gender of the subject and that of the entity.

As a psychoanalyst, Jones (1931: 43-44, 76) unequivocally assigns a universal sexual basis to all nightmare encounters with any sort of entity, humanoid or animal, whether incubus, succubus or what Hufford would call Old Hag. All nightmares are expressions of conflict arising from repressed sexual desire. The more intense the repression, the more intense the nightmare attack. The most strenuously repressed urges, which when reactivated therefore give rise to the worst nightmares, are the incestuous desires of infancy.

For example, he cites a case from Bond (1753, in Jones 1931: 44-45), in which a fifteen-year-old girl had a terrifying dream in which 'a great heavy man came to her bedside and without further ceremony stretched himself upon her'. Jones says that what she both desired and dreaded came to pass in her imagination.

On his view, the intense terror of nightmares arises from the conflict between the sexual desire producing dream imagery which would lead to its fulfilment and the repressing force of the consciousness, which resists that imagery. When the desire threatens to overpower the repressing force, the subject often awakes in a panic rather than dream the fulfilment of the unacceptable urge. However, Jones also explains dread in another way: the dream presents scenes which would fulfil the subject's suppressed urges but the true, desired, nature of what is being played out is concealed by cloaking the scenes in an element of dread; in this way what happens in the dream appears to the subject as undesired, when really the subject desires it.

Jones (1931) is able to explain numerous kinds of experiences and beings, not only incubi and succubi but also werewolves and vampires, as products of suppressed sexual urges. He traces the 'mare' component of 'nightmare' to a word 'mara', which in a range of similar forms occurs in several European languages; it denotes an incubus or succubus. However, the assimilation of the night*mare* to ideas of horses is also explored, as horses are potent symbols of sexuality.

The indiscriminate applicability of Jones's hypothesis should create some diffidence as to its validity. There is almost nothing of relevance that it does not purport to explain, and nothing would count as falsifying it (see Chapter 2).

The psychoanalytic hypothesis maintains that incubus nightmares are a more or less disguised playing out of repressed infantile sexual desires on the part of the subject. However, in the last decades of the twentieth century, public awareness of child sexual abuse was much increased. One can now plausibly interpret incubus

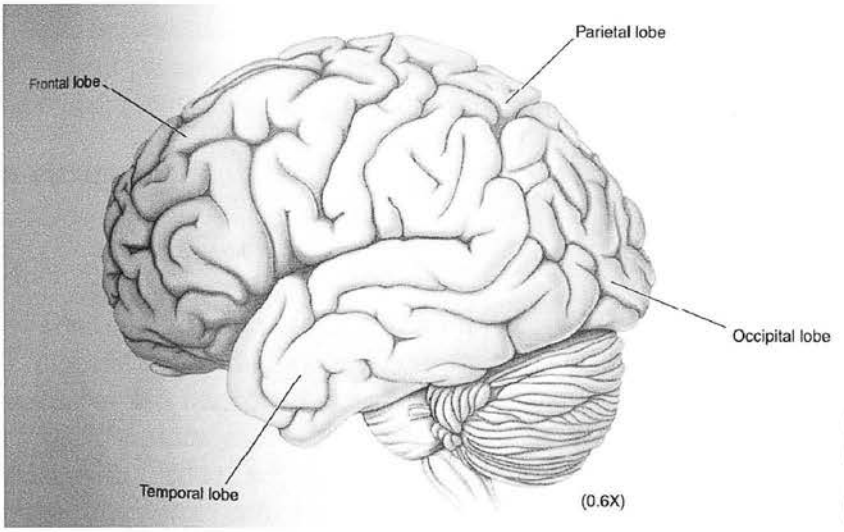
experiences as a more or less disguised recollection or replay of actual events from the subject's childhood involving sexual threat or assault. When an hysterical patient expressed the notion that her father had attempted to have intercourse with her as a child, Freud perhaps too readily assumed that her belief was merely a wish resulting from her own infantile incestuous desires, in accordance with his theory (Munz 1973: 87). In Chapter 3 I have speculated that one modern case recounted in a television documentary might have been not a replay but the actual occurrence of a gross homosexual assault. Consider the incubus case from Bond (1753, in Jones 1931) above, in which the father rushed into the bedroom from the next room after hearing the girl's screams and next morning the girl had 'a copious eruption of the menses'. If this were reported today, social workers would take the girl into care. However, there is no suggestion in the accounts I have read that sexual abuse took place. Given the diversity of presence encounters – including not just the Old Hag and nightmares but also ghosts limited to their own haunted houses, and extraterrestrials – I do not think that many cases are amenable to being explained as recollections of abuse.

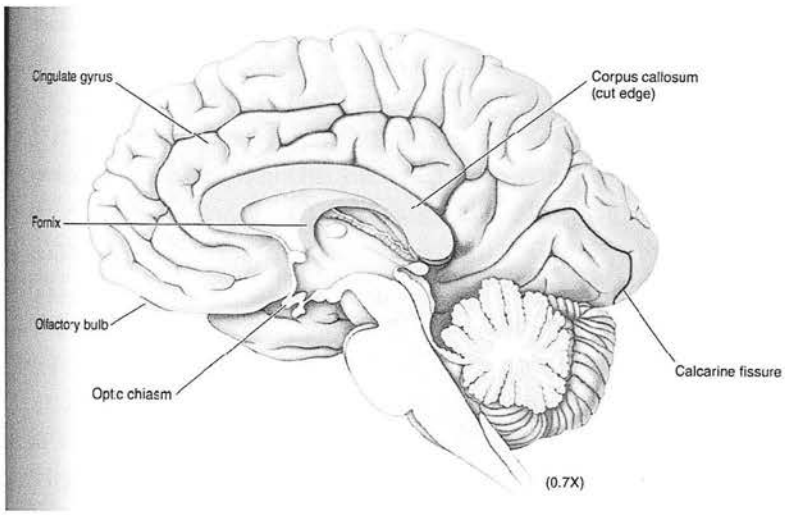
I think some useful insights can be obtained from the psychoanalytic hypothesis. In effect, according to Jones, the subconscious generates imagery which is presented to the consciousness, the waking or dreaming consciousness, and some of that imagery is unacceptable to the consciousness. So there is conflict between the conscious and subconscious. It takes two to be in conflict, so there seem to be two components, almost two personalities, in one mind. From another aspect, we could say that involuntary brain processes produce imagery which is accessed by those processes associated with the conscious mind, the part of the mind which wills.

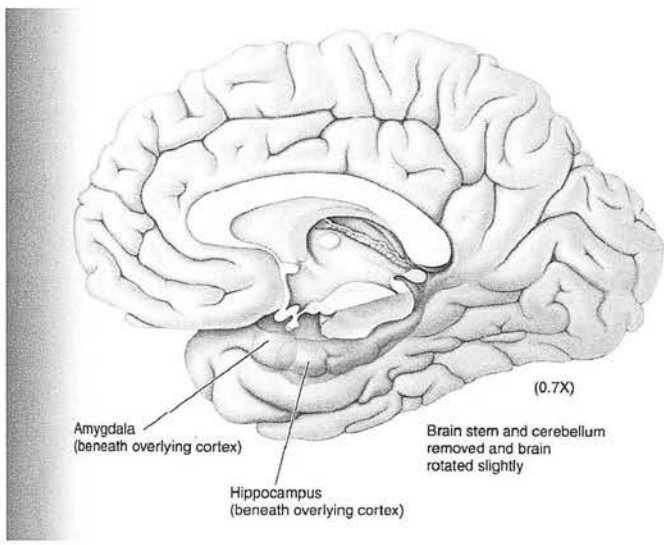
APPENDIX 4A

The human brain

For this section I have used chiefly Bear et al. (2001), Carter (1998) and Greenfield (1996). The illustrations are reproduced from Bear et al. (2001: 207, 211).







The purpose of this section is not to offer an amateur lecture on neurology, but to summarize the general structure of the brain and locate those features which are particularly relevant to numinous experience and 'neurotheology' (d'Aquili and Newberg 1999: 12, 15-16). In this enormously complex organ, the relatively uniform-looking neocortex overlies a huge diversity of subcortical formations, ganglia and nuclei. There are many identifiable components, most of whose functions have been mapped, albeit in some cases only tentatively. I have listed only the most prominent structures within the brain; there are many more. Some structures listed will be discussed in more detail later because they play a leading role in theories about paranormal and religious experiences. Others are mentioned here only to set the scene within which the more interesting structures perform.

Brain structures

Cortex

The largest structure of the human brain is the *neocortex* (or just 'cortex'), which overlies the limbic system and the other components of the forebrain. In apes and monkeys the neocortex similarly dominates the rest of the brain in size. The evolutionarily older *paleocortex* consists of the olfactory cortices (Barton and Aggleton 2000: 484), which are located below the neocortex and forward of the thalamus (discussed below). In the brains of lower mammals, such as rats, the paleocortex is proportionately much larger than in primates.

Each hemisphere of the neocortex has four structurally and functionally distinct regions or lobes, separated by deep folds or fissures. Often, the lobes are taken to include subcortical, limbic structures attached to the underside of the cortex. The *frontal* lobe occupies the forward area from above the eye backwards almost to the midpoint of the length of the brain. Behind the frontal lobe and beneath the dome of the skull lies the *parietal* lobe, which extends almost to the rear of the cranial cavity. At the rear and below the parietal lies the *occipital* lobe. On the side of the cranial cavity, below the parietal, lies the *temporal* lobe. The temporal lobe is actually continuous posteriorly with the parietal and occipital lobes, but is separated from the frontal by the Sylvian fissure. Beneath the Sylvian fissure lies the *insula,* which is cortex continuous with the temporal, parietal and frontal lobes. The surface of the cortex is folded, so that its area is greater than it would be if it were smooth. In human beings the cortical surface is more folded than in any other creatures except elephants and cetaceans.

A groove or concave fold is a *sulcus;* the convexity of a fold is a *gyrus.* Several gyri and sulci together which seem to form a functional unit are sometimes referred to as a *lobule.* Functional areas of the cortex, whether gyri, sulci, lobules or lobes, are sometimes referred to as *cortices.*

Broadly, the occipital lobes and anterior regions of the parietal lobes are concerned with incoming signals, both from external sensory organs and from the interior of the body. Just behind the central sulcus, which separates frontal and parietal lobes, is the *postcentral gyrus,* which is the most anterior gyrus of the parietal lobe. It contains a representation of the body (known as the *homunculus),* on which sensations are mapped. The farther backward from the central sulcus one

looks on the parietal lobe, the less concerned with sensory input and the more concerned with associations is the area under examination. The occipital lobe is principally concerned with vision, containing primary and secondary visual cortex.

Posterior regions of the frontal lobes are concerned with generating outgoing signals to control the body, principally of course movement. Facing the postcentral gyrus across the central sulcus is the *precentral gyrus,* the most posterior gyrus of the frontal lobe. This is primary motor cortex; it also contains a map of the body, from which signals are sent via the basal ganglia to actuate limbs. Anterior to the motor cortex is the supplementary motor area and premotor cortex. Anterior to those are the prefrontal areas. Broadly, the farther forward one looks on the frontal lobe from the central sulcus, the more removed from immediate motor functions and the more concerned with associations is the area under examination.

Anterior regions of the frontal lobes, posterior regions of the parietal lobes and several regions of the temporal lobes all seem to be concerned with associations – that is, correlating information from different senses and from memory. Perhaps exclusively the temporal lobe is concerned with storing and retrieving memories, and perhaps exclusively the prefrontal areas are concerned with decision-making.

Limbic system

Hidden within the envelope of the four cortical lobes lies the *limbic system,* sometimes called a limbic lobe, which consists of a number of diverse structures (Chow 2001; Ramachandran 1999: 178, 228). Among these are the *cingulate gyrus,* which is the cortex on the inward side of each hemisphere, facing the other hemisphere. It is distinct from the external lobes. Below it is the *corpus callosum,* which connects the two hemispheres (see later). Below the corpus callosum and forward of the thalamus extends the *septum.* Nestling against the inward surface of the temporal lobe and attached to it are the *temporo-limbic* structures, the *hippocampus* and, anterior to the hippocampus, the *amygdala.* Behind the frontal lobes, centrally, below and between the cortices, is a collection of small disparate nuclei called the *hypothalamus.* There are extensive reciprocal connections between the hypothalamus and the amygdala and hippocampus of either hemisphere.

The septum is thought to govern emotional responses. The hippocampus is required for storing memories. The amygdala attaches value and emotional content to experience and memory. The hypothalamus is also concerned with emotion, urges and appetites, and with autonomic functions and homeostasis, balancing the complementary arousal and quiescent systems of the body.

The limbic system is often stated to be a primitive part of the brain (e.g., Newberg and D'Aquili 2001: 43) but the neocortex has not evolved at the expense of the limbic system. The limbic system has continued to evolve alongside the expanding cortex throughout the evolution of the primates (Barton and Aggleton 2000: 480). Each limbic structure has coevolved with those parts of the cortex to which it has connections (*cf.* Deacon 1997: 206). Some limbic structures are even 'cortex-like' in that they have a neural configuration resembling that found in the cortex, while others are non-cortex-like. For example, the dense connections between the various nuclei of the amygdala are evidence of its integrity as a single functional

entity, yet the basal and lateral nuclei are cortex-like, while the central and medial nuclei and the anterior amygdalar area are non-cortex-like (Rolls 2000: 483, 492).

Connections between hemispheres

Below the cingulate gyrus, the two cortical hemispheres are connected by a broad bundle of two hundred million fibres, the *corpus callosum.* The hemispheres are also connected at a subcortical level by a number of much smaller *commissures,* including the *anterior, hippocampal, habenular, posterior* and *collicular* commissures.

Basal ganglia

In the centre of the brain is the *thalamus,* which has a left and right lobe. Outward of and below the thalamus lie on either side the *basal ganglia.* These are, next to the thalamus, the *globus pallidus,* and then the *striatum,* which consists of the *putamen* and its posterior extension the *caudate nucleus.* The *subthalamic nucleus* and the *substantia nigra,* which is actually a midbrain structure, are included as part of the basal ganglia.

The thalamus serves as a central router of the brain, including reception of incoming sensory signals. The putamen is connected to frontal motor cortex and is involved in involuntary movement. The caudate nucleus is connected to prefrontal association cortex and alerts the latter to conditions which require attention. The striatum receives projections to the basal ganglia from the cortex. The globus pallidus sends projections to the thalamus from the basal ganglia. The subthalamus and substantia nigra are involved in motor control.

Midbrain and hindbrain

The structures so far listed are all part of the *forebrain.* The thalamus, at the centre of the forebrain, can be viewed as the summit of the brain stem. Behind and below it lies the *midbrain,* then the *hindbrain,* consisting of the *pons,* the twin-lobed *cerebellum* sprouting behind it, and the *medulla.* Below the pons the medulla merges into the spinal cord, passing through the foramen magnum out of the base of the skull. Finally, the spinal cord extends down the rest of the trunk. At the base of the medulla is the *pyramidal decussation,* where the thick bundles of ascending sensory and descending motor axons cross over, so that the left side of the body is sensed and actuated by the right hemisphere of the brain and vice versa.

Besides the large, noticeable cerebellum, which processes fine control of balance and movement, the midbrain and hindbrain have smaller specialized formations and nuclei. For example, on the posterior aspect of the midbrain are the pairs of *superior* and *inferior colliculi,* involved in perception. Through the pons and medulla runs the *reticular formation,* concerned with regulating sleep and attentiveness. In the medulla are the pair of *olivary bodies,* involved in hearing, and the *raphé nuclei,* which manage mood and wakefulness.

Ventricles

Extending up inside the brain, the spinal canal, containing cerebrospinal fluid, opens out to form the fourth ventricle at the level of the pons, the third ventricle centrally in the skull, and the lateral ventricles, one on either side, below the corpus callosum.

Blood supply

Blood supply to the brain is provided posteriorly by the twin vertebral arteries and anteriorly by the twin carotid arteries. The vertebral arteries merge into the single basilar artery inside the base of the skull, but the carotid arteries each serve the hemisphere on their own side. By injecting sodium amytal into one carotid artery, it is possible to anaesthetize the ipsilateral hemisphere while the other remains awake. This procedure is known as the *Wada test.* However, the carotid and basilar arteries are interconnected by anterior and posterior communicating arteries forming the *circle of Willis,* so that the period during which the contralateral hemisphere remains unaffected in the Wada test is limited to a few minutes (Beaton 1985: 112).

Relevance

All identified brain structures are shared by us with apes, monkeys and prosimians. There is nothing we possess that they do not, although of course size and proportions vary. Indeed, much of human knowledge about the function and formation of the brain has been derived from studies of other primates, especially rhesus monkeys (macaques). Rhesus monkeys, along with cats and rats, as the preferred experimental animals, have been injected with drugs which imitate, facilitate or inhibit natural neurotransmitters, have had selected nuclei lesioned with probes and toxins, have had their amygdalae sucked out, have had whole frontal or temporal lobes excised on one side or bilaterally, and even whole hemispheres removed, so that post-operative changes to their behaviour could be studied.

The projections of nerve fibres from one part of the brain to others have been studied by staining. The activity in the live brain has been monitored for half a century by electroencephalographs (EEG). In recent decades it has become possible to image the live brain and its activity using computerized tomography (CT), single photon emission CT (SPECT), positron emission tomography (PET), magnetic resonance imaging (MRI) and functional MRI (fMRI).

APPENDIX 5A

Dissociative states and epileptiform EEG

In a widely cited paper Mesulam (1981) describes twelve patients who suffered dissociative states. Dissociation is a disturbance of continuity of personality. Seven of these patients interpreted their condition as multiple personality and the other five as spirit possession. In all cases they had abnormal EEG resembling that found in temporal lobe epilepsy, but only some exhibited clinical symptoms such as absences or convulsions, and most had no family history of epilepsy. I shall summarize a few cases so that the reader knows what sort of conditions are under discussion, and then cover Mesulam's conclusions.

A young woman had experienced absences since the age of twelve but no convulsions. She had a head injury at the age of one. She appeared to have three personalities: Edna, the patient herself, left-handed, dependable; Linda, a dominating, right-handed person who had tortured animals; Hanna, gullible and immature. The change from one to another was instantaneous. Edna and Linda communicated by written notes but Edna did not know otherwise what Linda did, whereas Linda was apparently 'co-conscious', knowing about Edna but unable to interfere. EEG showed sharp waves bilaterally in the interior of the temporal lobes during drowsiness and theta waves over the left temporal during waking. Theta waves are slow and normally found during non-REM deep sleep.

Another young woman experienced panic attacks, visual hallucinations and déjà vu. During periods of altered consciousness she would engage in rocking and lip-smacking. She had been treated in hospital for psychosis, rage and suicide attempts. She believed she was possessed – and not in a metaphorical sense – by the devil, whom she heard cackling inside her head, telling her to do things like throwing coffee into people's faces. An exorcism was performed, at the beginning of which she lost consciousness, but she felt relief afterwards. EEG showed spikes in the anterior temporal. A combination of drugs reduced the lip-smacking and decreased the frequency of the feeling of possession.

Not all patients were women, but I shall summarize the information about one more. An older woman, diagnosed schizophrenic, had grand mal seizures for ten years until they came under control using anticonvulsant drugs. Auras included déjà vu, jamais-vu and depersonalization. EEG showed temporal-lobe spikes bilaterally. She had practised Judaism as well as varieties of Christianity. For a period of a year she had episodes during which she believed she was a messiah, 'possessed by God'.

On the basis of these and other studies, Mesulam suggests that multiple personality and possession cases may be behavioural manifestations of abnormal electrical activity in the temporal lobes, and points out the widely observed association of a range of behavioural changes, from mere hyperreligiosity to paranoid psychosis, with psychomotor epilepsy. In the temporal lobe, high-order sensory information is combined with emotional tone mediated by the amygdala and hippocampus, which have reciprocal projections with the hypothalamus and therefore have access to the internal state of the body. Spontaneous paroxysmal discharges in focal areas of the temporal lobe may disturb the normal process of

combining sensory and affective data. Subjectively the balance of thought, perception and emotion would be altered.

When interictal behaviours such as hyperreligiosity, humourlessness and aggression come about as a result of chronic epilepsy, they become incorporated into the subject's behavioural repertoire, forming part of their personality. But, Mesulam suggests, in some cases the changes may be so great or sudden that they cannot be integrated. In such cases, dissociative states may appear, so that when the new behaviours are carried out they are assigned to new or alien personalities. Of the sample studied, in seven cases the temporal-lobe EEG abnormality was asymmetrical, and in five of those seven cases the predominant focus was located in the nondominant hemisphere, the right in right-handers and the left in left-handers. Mesulam hypothesizes that dissociation is more likely in cases where the focus of abnormal activity is in the nondominant hemisphere.

Mesulam's hypothesis, that epileptiform activity in the temporal lobe is responsible for the phenomena experienced as multiple personality and possession, is plausible and certainly testable. For patients who report the dissociative symptoms it would be necessary to record EEG, both ictal and interictal. I am not aware that any such study on a large scale has been done or the results of smaller scale studies collated.

APPENDIX 5B

Schizophrenics as bicameral survivors

Jaynes (1976: 404-432) proposes that schizophrenic patients who hear hallucinated voices are people who manifest a condition corresponding to the putative bicameral mind of antiquity, or, perhaps more accurately, an intermediate condition, since they are generally conscious and the voices are mostly treated as unwelcome and intrusive.

On Jaynes' theory, the hallucinated voices of the bicameral mind and of schizophrenic patients are an intrusion from the right-hemisphere linguistic function or homologue of the self, located in the temporo-parietal region. This would be consistent with evidence from EEG and brain scans of schizophrenic patients which has shown lowered activity in the dominant (left, linguistic) hemisphere with predicted reduced ability in verbal tasks (Frude 1998: 174-175). Hypofunction of the left hemisphere should facilitate intrusions from the right (Persinger 1994: esp. 1064).

Even so, some authorities regard schizophrenia as a manifestation of deficit in frontal-lobe function. They view schizophrenia as a combination of disorders of willed action, self-monitoring and monitoring the intentions of others: a failure of a supervisory attentional system also found in patients with frontal-lobe lesions (Wilson et al. 1997: 246). In some schizophrenic patients PET scans have shown degrees of atrophy of the prefrontal cortex (Greenfield 1996: 170). Schizophrenia may be produced by raised levels of, or hypersensitivity to, the neurotransmitter dopamine, or, on another hypothesis, hypoactivity of certain types of glutamate receptors (Bear et al. 2001: 696-699). Increased levels of dopamine have been detected in the left amygdala of schizophrenics, but this could be because the amygdala has extensive reciprocal connections with the prefrontal cortex, abnormalities of which are associated with schizophrenia (Aggleton and Saunders 2000: 21).

It would seem that the neurotransmitter hypotheses are not intrinsically incompatible with Jaynes' theory, in that alterations of neurotransmitter levels or sensitivity could be the mechanism facilitating inter-hemispheric communication. However, the frontal-lobe hypotheses do appear to be incompatible with Jaynes' theory, unless perhaps the frontal-lobe deficit removes inhibitory influences which keep anomalous inter-hemispheric communication at bay.

A *post-mortem* study of some schizophrenic patients showed that the corpus callosum was unusually thin, while another study showed it to be enlarged (Frude 1998: 174). The latter phenomenon has been interpreted as developmental compensation for defective interhemispheric communication. A further study showed schizophrenics exhibiting greater EEG 'power' in the left temporal lobe than normal subjects, the right temporal lobe being equal to normals (Springer and Deutsch 1989: 280). These observations seem inconsistent with the hypothesis of *right*-hemisphere intrusions as an explanation of schizophrenic symptoms.

Jaynes himself (1976: 407-408), however, points out that there are several types of condition referred to schizophrenia, and several theories regarding the

aetiology. What he is discussing is a specific type of unmedicated schizophrenia with the symptom of hallucinated voices. Given that most modern-day sufferers are likely to be have been on long-term medication since the symptoms first appeared, the underlying unmedicated neural phenomena are probably difficult to ascertain.

Recall that the function of hallucinated voices in the bicameral era of Jaynes' theory was to give advice on which the person could act. Bicameral individuals depended on the advice and warnings of their voices to be able to conduct themselves successfully in everyday life (1976: 134, 141). The voices therefore would have had to give wise advice and timely warnings and conduce to the well being of the individual. On the last point, one would expect that the voices would have had to be encouraging rather than derogatory, and probably calming rather than inflammatory. One would not expect the voices to be advantageous to their hearer only occasionally; one would expect them to be advantageous more often than not. It is better to make a decision than be indecisive; but it is not enough on every occasion just to make any decision, right or wrong: most decisions have to be beneficial for the person to survive successfully.

According to Jaynes' own testimony (1976: 88-90, 95-96, 418), the voices heard by schizophrenic patients are generally not merely warning or advisory but hypercritical. They 'admonish, console, mock, command'; they 'yell, whine, sneer'; a voice spoke 'in its most reproachful tone'; a patient 'heard accusations from God'. A particularly negative voice, which carries negativity about oneself to its logical conclusion, berated a patient, 'Why are you sitting here making believe you are as good as anyone else when you're not?' and then, 'You're no good' and 'You might as well drown yourself', advice which the patient tried to follow. The effectiveness at an everyday level of a person hearing hallucinated voices is cast into question by patients who say, 'When I am making a cake she [the voice] gets too impatient with me', or 'It is really very hard to keep conversations with others because I can't be sure if others are really talking or not and if I am really talking back'.

I have not selected just a few examples from Jaynes' repertoire which happen to be negative. They are almost all like that. The voices are negative and sometimes provoke to suicide attempts. This is hardly the sort of advice that would lead a bicameral person to be successful in life.

On the other hand, the comments of the hallucinated voices are exactly the sort of advice we would expect from a right hemisphere which subserves vigilance, doubt and depressive affect (Chapters 4 and 5). In conclusion, the viability of a bicameral mind in antiquity seems problematic, but the proposal that schizophrenic patients with hallucinated voices are suffering intrusions from the non-linguistic hemisphere has some plausibility.

APPENDIX 5C

Mystical states

If all subjective experience is correlated with neural events, then mystical states of consciousness are not exempt. The fact of having a neural correlate does not invalidate mystical experience, since all experience has a neural correlate. In my view, what would appear to invalidate it – that is, render it suspect as a proposed apprehension of ultimate reality – is that it should be the outcome of merely aberrant brain processing.

It has been alleged that mystical states can be correlated with certain neural processes, and that the sequence of events in the brain by which they are deliberately induced by a subject in the course of meditation can be traced. In a detailed paper (D'Aquili and Newberg 1993) and at greater length but with less specificity in two books (D'Aquili and Newberg 1999; Newberg and D'Aquili 2001), two workers offer their neuropsychological explanation. I shall use the 1993 paper as the main source when describing the mechanism, also described in Newberg and d'Aquili (2001: 116-123), and the 2001 book when discussing implications.

Absolute unitary being

Sequences of neural events have been proposed for different types of meditation which should result in a sense of what D'Aquili and Newberg call *absolute unitary being* (AUB), a sense of being at one with the whole of creation. There are other attempts to account neurologically for such experiences, but an analysis of this detailed and plausible hypothesis will suffice for my purpose, which is to demonstrate that an attempt can be made. Whether it is satisfactory as an account is a secondary question, and I try to deal with that later.

Presuppositions

The hypothesis depends on the attribution of specific functions to certain structures in the brain. First, in the frontal lobe, the prefrontal cortex is the location of those circuits which seem essential to decision-making. In older philosophical terminology, one might say it is the seat of the will. Within the *right* parietal lobe, the *posterior superior parietal lobule* (R-PSPL) is concerned with the sense of space and position. Within the *left* parietal lobe, the *posterior superior parietal lobule* (L-PSPL) is concerned with the dichotomy of self and other, the distinction between oneself and the rest of space. In the books Newberg and d'Aquili (*e.g.*, 2001: 4) refer to these as the *orientation association areas* (OAA). The *inferior parietal lobule* (IPL), in both hemispheres, is concerned with interpreting causality in the sequence of sensory input. In either hemisphere, in the temporal lobe, the *inferior temporal lobule* (ITL) is association cortex concerned with integrating visual data. It is the *visual association area* (VAA). It overlies the hippocampus, which is involved with memory, and the amygdala, which is also involved with emotion, particularly fear. In the centre of the base of the cranial cavity, the lateral hypothalamus is also, apparently, concerned with fear and with arousal and the 'fight or flight' response to danger. In contrast, the medial hypothalamic nuclei appear to be an extension of the

parasympathetic nervous system up into the brain stem. Activity there subserves vegetative states and generates a subjective sense of quiescence.

The hypothesis also depends on the effect of *deafferentation* on specific cortical areas. All structures in the brain, cortical and subcortical, receive incoming or *afferent* neural projections from other parts, which carry data to be processed by the target structure. The target structure has its own outgoing projections to other parts, which carry the signals that it has generated by processing its input. The processing may in some cases be accompanied by a component of subjective experience of some kind. The question arises: when input signals are cut off, what processing does the deafferented structure do, what output does it generate, and what is the concomitant subjective experience?

Via negativa

In passive meditation, the subject seeks to empty the mind of thoughts, not concentrating on anything. This method has been known in the West as the *via negativa* but is characteristic of eastern, particularly Buddhist, practice. The decision to empty the mind is an exercise of the right prefrontal cortex (R-PFC). This is the *attention association area* (AAA). The R-PFC inhibits input to certain other parts of the brain, notably the posterior superior parietal lobules (PSPL). In particular, input from the *inferior parietal lobule* (IPL) is blocked from reaching the PSPL. Especially in the left hemisphere, the IPL mediates language and concepts, so linguistic constructs and concepts are prevented from entering the PSPL. When the right PSPL is deafferented, it has no data to process, so instead of generating a sense of position in space, it generates a sense of pure space. The left PSPL also becomes deafferented. Without data to process, by which it would distinguish self and the rest, it is unable to distinguish self and other, and instead generates a sense of wholeness. Now, although the PSPLs have been deprived of incoming signals, they can still output signals. These cortical lobules project to the hippocampus and other limbic structures, which add an emotional component to the sensations of space and loss of self. The subject thus feels a oneness with the whole of creation. As the limbic structures have copious projections back to the prefrontal cortices, a reverberating loop is set up. Maximal stimulation within the hypothalamic nuclei causes spillover from one side to the other within the limbic system. The prefrontal cortices, right and left, at this time also stimulate one another via the corpus callosum, which connects the left and right hemispheres at cortical level. This way, the experience, once set up, is self-sustaining.

Via positiva

In active meditation, the *via positiva,* the subject meditates on an object. This may perhaps apply to someone meditating on an icon, on the person of his or her guru, and in ancient times on statues of the gods (*cf.* Cumont 1922: 121-122). Concentration on an object is initially an activity of the AAA or right prefrontal cortex (R-PFC). The image is fixated in the right PSPL. The source of the image is the inferior temporal lobule (ITL), which either delivers memories of images or receives current images directly from the visual cortices, in either case adding to those the emotional or religious associations of the object from memory. Continuous

fixation stimulates the right hippocampus and amygdala, and in turn the lateral hypothalamus, and a mildly pleasant mood is the result. The hypothalamus stimulates the amygdala and hippocampus, which in turn stimulate the prefrontal cortex, so a reverberating loop is set up in the right hemisphere. Spillover in the hypothalamus stimulates the amygdala and hippocampus of the left hemisphere, which stimulate the left prefrontal cortex. That in turn inhibits the left IPL, and the left PSPL instantly becomes deafferented, so that the sense of a distinction between self and other ceases. However, the right PSPL is not deafferented but is concentrated on the object of meditation. As a result, the subject has a feeling of oneness with the object of meditation. In the hypothalamus, nuclei with conflicting functions (quiescence and arousal) are concurrently stimulated. Also, the inhibitory function of the right prefrontal cortex is stimulated (by the incoming signals) at the same time as (of its own accord) it is promoting the fixation. At this point, the inhibitory function succeeds, blocks the fixated image coming from the right ITL, and causes the right PSPL to be deafferented. Now the subject experiences the sense of pure space (deafferented R-PSPL) along with the abolition of self and other (deafferented L-PSPL). Thus the end point reached is the same as with the *via negativa:* the sense of absolute unitary being.

Types of religious experience

Stimulation by the cortex, via the amygdala and hippocampus, of the lateral hypothalamus may generate a feeling of exaltation accompanying the other, cortical, components of the experience, the sense of pure space together with abolition of self. This sense of absolute unitary being is the height of religious experience, and is sought deliberately by practitioners of meditation.

Discussing lesser mystical states, d'Aquili and Newberg refer to Otto. They distinguish as follows between his *numen* and his *mysterium tremendum.*

In the case of the former, deafferentation of the inferior temporal lobe, concerned with memory, may allow internal intrinsic memories to rise into consciousness. These are not memories of experiences but are intrinsic to the circuits of the brain: they may correspond to Jungian archetypes. These archetypes, suffused with religious feeling, presumably become *numina* for the subject.

In the case of the *mysterium tremendum,* the inferior parietal lobule (IPL) is deafferented. The IPL generates the sense of causality. This area of the cortex, without sensory input to work on, will generate a sense of pure causation: a subjective sense of causality as a being in its own right. This, accompanied by limbic discharges generating emotion, particularly fear, produces a sense of the 'First Cause', 'God', the *Mysterium Tremendum et Fascinans.*

Religious experiences come about spontaneously as well as in response to practices with such experiences as their goal. In these cases, d'Aquili and Newberg (1993) propose that the sequence of events begins with activity in the limbic system and works from there upward to the cortex, but they do not detail what such a sequence would be, although the matter is discussed in Newberg and d'Aquili (2001: 42-46).

Reductionism

D'Aquili and Newberg explicitly caution against a reductionist view which would interpret a person's 'objective' experience of God as no more than neurochemical flux. They allude to the complex sequences of neural events which are required for the everyday perception of objects in the physical world, and suggest that everyday consciousness is not necessarily superior to mystical states in its claim for the reality of what is perceived or experienced.

I would argue that a veridical perception is one in which the subjectively perceived or experienced object actually exists. There may be no way to determine whether the alleged object exists except by means of a perception, but the principle is that the alleged object has to be there and not be just something generated entirely in the mind of the percipient (Chapter 2).

Now, the subjective experience of absolute unitary being, as described by d'Aquili and Newberg, arises purely internally. It is not a perception of anything external to the subject. By their account, the sensations of pure space and the obliteration of the self-other dichotomy arise in areas of cortex when those areas are deafferented: that is, they are receiving *no input.* If they are receiving no input, then by definition, as far as those cortices are involved, the subject is not perceiving anything. One would draw the conclusion that the experiences are illusory, in that they arise only because those cortical areas continue to process in the absence of data.

Those cortices can be assumed to have evolved their present functions because it was advantageous for an organism to determine its position in space and the limits of its own body. These determinations, based on sensory input, are the functions which those cortices perform in the life of the organism. For them to be deafferented is an *abnormal* condition. They continue to carry out processing, but in the absence of data they cannot be expected to produce accurate determinations of position in space or limits of the body. The determinations which they do produce in these circumstances are aberrations, because they are not functioning in the way they have evolved to do. These determinations are like the output of a computer program with inadequate validation procedures when it processes inputs outside the valid range: garbage in, garbage out.

It therefore seems, on a *prima facie* basis, that the discussed hypothesis does lead to a reductionist and negative conclusion about mystical states. The conclusion is that those states do not mediate apprehension of ultimate reality or indeed of anything at all, but instead are illusory experiences produced by abnormal neural processes. They are a by-product of a specific set of survival-orientated mechanisms of the human brain, which some human beings have discovered can be made to function unnaturally to produce a sort of extreme 'pleasure'. The position is analogous to the way that we use sexual organs, which evolved for reproduction, for pleasurable purposes unrelated to procreation.

More fundamentally, the suppositions on which the hypothesis of d'Aquili and Newberg depends are considerable. They stretch one's confidence in the neurological data to the limit. Although there is general agreement in the literature that the cortical areas and limbic structures referred to have more or less the functions attributed to them, the attributions are not clear cut.

Moreover, the presumed activity of cortical areas when deafferented is not known; it is part of the hypothesis. Why should it be that the deafferented PSPLs still generate output? Why should they not quiesce in the absence of incoming stimuli? Where do they get the energy to generate their own activity, when they are not receiving energy from a stimulus? One could argue perhaps that they are receiving energy from the prefrontal cortices (PFCs), in the course of inhibition by the latter of input from the inferior parietal lobules. So there is input, but the input from the PFCs has no content, or at any rate no 'valid' content of the type expected from the IPLs that can be successfully processed.

In an experiment which recorded electroencephalographs of subjects during meditation, one subject experienced the mystical sense of absolute unitary being. From this person, high amplitude alpha waves were recorded, and a large amount of theta frequencies. There were intermittent discrete bursts of strong theta waves over the prefrontal and parietal areas, indicating synchronous activity of large populations of neurons in those cortical areas. In later studies of meditating and praying subjects, SPECT scans showed increased blood flow in the OAA (Newberg and d'Aquili 2001: 3, 6). D'Aquili and Newberg regard these data as supporting their hypothesis, because one would expect to see high activity in the prefrontal cortices and the spontaneous activity of the deafferented parietal areas.

Other workers (*e.g.,* Ramachandran 1999; Persinger and Makarec 1992: esp. 221, 223) propose that mystical and religious awe are associated not with the superior parietal areas but with the temporal lobes, both cortex and amygdala. This view is based on the occurrence of feelings of intense meaningfulness, cosmic awareness and the like in some cases of temporal-lobe epilepsy. Not all such patients have cosmic experiences, but some do, like Dostoyevsky. In a television programme based on Ramachandran's 1999 book, a temporal-lobe epileptic patient describes the feelings of being godlike himself and of being chosen by God, which occur during his ictal states[1]. Ramachandran makes the hypothesis that the limbic system, as we have discussed before, attaches meaning and value to otherwise neutral experience. The attachment of value to experience is a survival mechanism, since some things are important – for example, avoiding predators, finding food, finding healing plants – and require the individual to attend to them. When the amygdala is hyperactive, meaning is attached not just to things that are important for the individual's survival or personal interests but to the entire content of experience. This would give rise to a cosmic sense of the significance and value of all things, in particular of the individual himself or herself. Ramachandran is careful to state that the explanation of religious feelings in terms of abnormal activation of temporal-lobe structures has no implications for the *value* of those feelings. However, in my view this is a sop. It is

[1] *Phantoms in the Brain,* Rosetta Pictures, Channel 4 Television 2000.

evident that this hypothesis holds out no more hope that such feelings are a veridical perception of anything than the hypothesis of d'Aquili and Newberg.

While I do not feel bound to accept that the hypothesis of d'Aquili and Newberg accounts for the mystical sense of absolute unitary being, I think it is probably correct within the limits of current theory and scanning technology. At the very least, it is a precursor of the kind of account that will eventually be given and accepted for such mystical experiences. The hypothesis is testable in principle, and can be expected at some stage to become testable in practice. In principle, if not yet in terms of practical possibility, the sequences of neural events during all kinds of mental activity, including meditation, are traceable. With functional magnetic resonance imaging (fMRI), which can trace activity from microsecond to microsecond in the living brain, the technological means available are beginning to approach the degree of accuracy that will be needed.

Criticism of the authors' metaphysical conclusions

D'Aquili died in 1999, and the 2001 book is mainly Newberg's work.

The theory and the evidence are plausible. It is a major achievement to have found what the neural correlate of mystical experience is, if indeed the correlate has been identified correctly, however incompletely. Even so, there are many confusions in the philosophical implications which the authors attempt to draw.

Newberg says (2001: 7), 'Gene and I suspected that we'd uncovered solid evidence that the mystical experiences of our subjects ... were not the result of emotional mistakes or simple wishful thinking but were associated with observable neurological events, which, while unusual, are not outside the range of normal brain function. In other words, mystical experience is biologically, observably and scientifically real'. This alleged newly discovered reality of mystical states is restated in several places (*e.g.,* Newberg and d'Aquili 2001: 126).

No one would deny that mystical *experience* takes place. It is unarguably a real experience. Like all experience, it has a neural correlate. If we can observe the neural correlate, then we can confirm the expectation that some unusual brain activity takes place during mystical experience. But observation of the neural correlate does not make the experience any more or less real than we knew it to be in the first place.

The most important question is: *what is mystical experience an experience of?* I have dealt with that question above, and suggested that, if mystical experience is mediated by the neural events described in the theory, then, on the face of it, it is not an experience of anything.

Newberg and d'Aquili (2001: 9) refer to 'the brain's capacity to make spiritual experience real' and 'evidence of a neurobiological experience that has evolved to allow us humans to extend material existence and achieve and connect with a deeper, more spiritual part of ourselves perceived of [*sic*] as an absolute, universal reality that connects us to all that is'. I do not see anything in the neural events described that makes spiritual experience any more or less real. Nor do I see how these events 'extend material existence', whatever that means. Newberg says that the spiritual part of ourselves is perceived as an absolute universal reality. Now,

universal reality is presumably what is designated by the phrase 'all that is', so he has told us that universal reality connects us to universal reality. This is clearly rather unsophisticated metaphysics.

There is a great deal of rambling about ritual, myth and other material, which I shall charitably pass over. There are also sentences such as (Newberg and d'Aquili 2001: 164) 'A Christian might call this truth [mystical experience] Jesus', which exemplify a straightforward misuse of the word 'truth' (see Chapter 2). It is also a category mistake: it is just nonsense to equate a *truth,* an *experience* and a *person.*

As part of the process of bringing about the mystical or religious feeling, Newberg (2001: 88-91) tells us that the amygdala is involved, in apprehending unusual signals and generating mild fear. Ritual gestures are unusual and alert those brain structures involved in anticipating danger, principally the amygdala. The close connection of the amygdala with the olfactory paleocortex means that incense has a fairly direct effect. However, in his analysis of the effects of ritual, and clearly alluding to Roman Catholic and Anglican practice, Newberg betrays an unfamiliarity with both liturgy and theology. Apparently, 'a priest swinging an incense dispenser [censer, thurible?] pauses to make a benedictive [*sic*] bow'. Bowing is not a sign of benediction. There is a reference to 'the sacrament of the Eucharist, which fulfils [*sic*] Christ's promise of union and eternal life'. If the sacrament *fulfilled,* rather than merely symbolized participation in, the promise of eternal life, then some of us would already be immortal.

More seriously, there is throughout a failure to distinguish between (1) the word 'God', (2) the concept of God, (3) the subjective experience of (apparently) apprehending God and (4) God as an putative actually existent being.

Newberg declares (2001: 159-161): 'God is unknowable; he is not an actual being but being itself, the absolute undifferentiated oneness that is the ground of all existence. ... If we cling to the comforting images of a personal, knowable God, a God who exists entirely apart from the rest of creation as a distinct individual being – we diminish the ultimate realness of God, and reduce his divinity. ... God cannot be set apart from this ultimate oneness as an identifiable personalized being – to do so would be to conceive of a God who is less than absolutely real.' There is confusion here between oneness or unity, and reality. No metaphysical argument is presented to show that what is real must be part of the oneness experienced by a mystic. There is no obvious reason why things might not exist which do not feature in the oneness apparently apprehended by a mystic. Who is to say that the experienced oneness really includes all there is?

The argument against God being separate from the universal oneness hangs on Newberg's interpretation of the mystical experience and its proposed neural substrate. Note that in the *via negativa* and *via positiva* the end point is allegedly the same: the mystic has the sense of absolute unitary being, of union with all that is. In the *via positiva,* the western mystic concentrates on a symbol which leads to a sense of union with God, the *unio mystica,* and this later may dissolve into absolute unitary being. In the *via negativa,* the Buddhist mystic seeks oneness, absolute unitary being, immediately, bypassing the supposedly intermediate stage of joining with the object of meditation experienced by the western mystic. In the process of the *via positiva,* the mystic, on reaching the *unio mystica* with God, may then 'fall short' according to

Newberg, and not reach the stage of absolute unitary being. This is quite a presumption. A value judgement is clearly being made here. Who is to say that the *unio mystica,* the sense of oneness with God, is less real than the sense of absolute unitary being? On a straightforward interpretation of the theory, in neither case is the mystic experiencing anything outside himself or herself. Consequently, neither experience has any more objective validity than the other. Newberg also says that the state of absolute unitary being may result for the western mystic as he or she tires of concentration, the relaxation rendering the right orientation area (R-PSPL) deafferented (Newberg 2001: 122).

The most startling statement is 'God cannot exist as a concept or as reality anyplace else but in your mind' (Newberg and d'Aquili 2001: 33). This is presumably explicated by the statement which soon follows: 'Whatever the ultimate nature or spiritual experience might be – whether it is in fact a perception of an actual spiritual reality, or merely an interpretation of sheer neurological function – all that is meaningful in human spirituality happens in the mind.' So what this amounts to is that we experience God the same way as we experience anything else, by means of neural processes. However, the bald ontological statement quoted in the first sentence of this paragraph is either a gross misphrasing of the explication or, taken at its face value, is completely unsustainable on any argument given by the authors. What is more, if we say 'God exists only in the mind', this is polite shorthand for 'We have an idea of God *but God does not exist*'.

The question of the existence of God is beyond resolution by neurology. All that can be said is that a neurological explanation of the subjective experience of union with God or indeed absolute unitary being may cast light on whether an external source of the experience is involved, which might then possibly be identified with the deity. On the theory of d'Aquili and Newberg it is plain that no external source is required to generate the experience.

Reductionism reconsidered

It is probable that, at some stage in the next few decades, the exact neural process which corresponds to the sense of, say, absolute unitary being, will be discovered.

It may be that that process does not involve deafferentation but rather a general heightened activity across various structures incorporating both sensory input and memories, or perhaps memories alone, but integrated so that a number of structures are concurrently processing all knowledge available to the brain. Maybe this is enough to produce the mystical experience. But, further, it may be that by this or some other process the brain reaches a level of arousal in which it is able to become attuned to states of being normally inaccessible. Perhaps the brain becomes attuned at a quantum level to apprehend pure spacetime or the universe at large. In such cases where the brain is processing information, from its memories or from becoming attuned to new external stimuli, the experience is veridical, in that the brain is apprehending something which does exist. Here I know I am in a grave danger of producing verbiage rather than worthwhile speculation.

However, it may be that the central factor of the hypothesis of d'Aquili and Newberg does apply, namely, deafferentation of the PSPLs. I have argued above that

the deafferentation hypothesis leads to the conclusion that the mystical experience is not a veridical perception of anything. Is there any way to maintain the validity of the mystical experience even on this account of its neural correlate?

I offer a proposal that, in the absence of input, the PSPLs are functioning indeed abnormally, but not aberrantly. So the sensation of pure space from the right PSPL and the sense of obliteration of self and other from the left PSPL are accurate representations of a state of being. Normally the PSPLs mediate our perception of objects located in space and separate from ourselves. In the absence of separate objects, only pure space and union with the rest of the world are left, and these are actual states of being, in fact ultimate states of being which we now apprehend in their own right without the confusion caused by perceiving separate objects. We are not *perceiving,* because we are not processing sensory input, but we are *apprehending* something real. In this sense, every perception involves *apprehension* as its final conscious stage, when we locate the object in space and in relation to ourselves. Here, without objects, the something real that we apprehend is the ground of being or pure existence. We apprehend it in so far as a human being can do so, using the same brain components as those by which we apprehend objects in existence.

Alternatively, one could perhaps maintain that deafferentation – or any other neural process which may eventually be discovered to account for the subjective mystical experience – is the way in which the human brain can become aware of the *possibility* of absolute unitary being. It may be that during the experience one is indeed not perceiving anything external or even apprehending anything real, but that one becomes aware of the possibility of such a state or being and becomes aware of some of the characteristics that it might have. Whether such a state or being actually obtains or exists is another matter, and probably not even determinable by scientific inquiry in the physical universe.

APPENDIX 6A

Earliest hominins

Classification

From the 1930s until the early 1980s it was generally believed that the ancestral stock of human beings split from that of the apes in the Miocene period, some time before 15 million years ago. The lesser apes, comprising gibbons and siamangs, are classified as a Linnaean family called the Hylobatidae. The great apes, comprising orang-utans, chimpanzees, bonobos (also called pygmy chimpanzees) and gorillas, along with their ancestors and extinct collaterals, used to be classified in the Pongidae; while humans and their ancestors and extinct collaterals formed the Hominidae. Recently, however, in view of the genetic closeness of the African apes to humans, and their genetic distance from orang-utans, it has become conventional to classify gorillas, chimpanzees, bonobos and humans in the family Hominidae, while the orang-utan is left in the Pongidae. Within the Hominidae the subfamily Homininae is then reserved for humans, their ancestors and extinct collaterals (Ward 2003; Wood and Collard 1999; Andrews 1995). A creature assigned to the Homininae is referred to informally as a hominin (occasionally the word is 'hominine'). Older publications used the term 'hominid' to refer to the same class of creatures.

Biochemical evidence

In the last thirty years, molecular biology has brought about a reassessment of the similarities and relationships between humans and African apes, and has produced estimates of the date at which the ancestors of humans and apes diverged. The resulting recent estimates make more sense of the fossil record than the very early date which would have included *Ramapithecus.*

Similarities of humans and African apes

In the cell nucleus, gorillas and chimpanzees have 24 pairs of chromosomes while humans have only 23 pairs. Gibbons have 22 pairs. To put this variation in perspective, some plants have hundreds of chromosomes. One of the human chromosomes appears to result from amalgamation of two of the chimpanzee chromosomes (Weiss and Mann 1978: 287; Gribbin and Cherfas 2001: 53, 131).

The principal haemoglobin of chimpanzees and humans is identical (Stringer and McKie 1996: 11-12; Diamond 1991: 19). In the late 1960s and early 1970s, study of another blood protein, albumin, gave rise to what was then a controversial new date for the divergence of hominins and apes. On the basis of quantitative differences between albumins taken from humans, African apes and Old World monkeys, assuming a reference date for the divergence between apes and Old World monkeys at 30 million years ago, itself an uncontentious date among palaeontologists, and assuming that the albumin molecule had changed since then at a constant rate, the point of divergence between African apes and humans should be about 5 million years ago. Vincent Sarich, one of the original researchers, stated in

1970, 'I now feel that the body of protein evidence on the *Homo-Pan* [human-chimpanzee] relationship is sufficiently extensive so that one no longer has the option of considering a fossil older than about eight million years as a hominid [hominin] no matter what it looks like' (quoted in Poirier 1981: 390).

Further biochemical research using a variety of proteins repeatedly confirmed a late date for the divergence of the hominids, so that by 1989 a standard textbook suggested a time between 10 million and 6 million years ago (Klein 1989: 399).

Genetic distance and dating

Comparison of sequences of DNA (deoxyribonucleic acid) in the cell nucleus, which constitutes the genes that determine the specific identity of the organism, has resulted in a clear quantitative statement of genetic distances among the various apes and ourselves. After the split of any species from another, the DNA of each species has been accumulating mutations at the same rate up to the present day. If a single date independently arrived at can be used to calibrate the rate of mutation, it becomes possible to determine the date at which each lineage split from the rest.

One summary states that common chimpanzees *(Pan troglodytes)* and pygmy chimpanzees *(Pan paniscus)* share 99.3% of their DNA, so they differ by 0.7%. Humans differ from both species of chimpanzee equally, by 1.6%. Gorillas differ from the chimpanzees and from us equally by 2.3%. Orang-utans differ from us and from the African apes by 3.6%. Old World monkeys differ from us by 7.3% (Diamond 1991: 16-20). For reference, humans share about 50% of their DNA with dogs.

The divergence of Old World monkeys from the ancestors of the apes and ourselves is dated on palaeontological evidence at between 25 and 30 million years ago. Palaeontology also indicates that the orang-utan lineage became distinct from the African ape lineage between 12 million and 16 million years ago. This time is about half way between the divergence of Old World monkeys and the present. Similarly, the genetic distance from us of orang-utans (3.6%) is about half that of the Old World monkeys (7.3%). Given the palaeontological dates above, genetic distance indicates that the date for divergence of gorillas should be between 7 million and 10 million years ago. The date for divergence of hominins and chimpanzees should be between 5 million and 8 million years ago, and for the divergence of the two species of chimpanzee between 2 million and 3 million years ago (Diamond 1991: 16-20; Goodman et al. 1990: 261, 264; Caccone and Powell 1989: 931, 932, 939). Comparisons of mitochondrial DNA make the lower figures more likely, and have suggested a date as late as 4.5 million years for the separation of hominins and chimpanzees. On the same basis, the common and pygmy chimpanzees became distinct as recently as 1.5 million years ago (Sarich 1984: 45-46).

It has not been universally agreed that humans and chimpanzees are more closely related than either are to gorillas. Marks (1994: 59, 66-69) describes the inadequacy of some of the molecular data and shortcomings in the methodology used to derive results. He draws attention to some molecular evidence favouring a closer relationship between gorillas and chimpanzees (as would be suggested by their physiology compared with ours) and suggests that there may well have been a three-

way split between chimpanzees, gorillas and humans. Similarly, Rogers (1994: 81) states that the dichotomous trees produced by molecular studies may be misleading, and that a trichotomy may better describe the separation of the three genera. On the other hand, Goodman et al. (1994: 3, 7, 17-19, 21), reviewing in detail a range of studies, make a strong case for the closeness of humans and chimpanzees, that is, for the existence of a human-chimpanzee *clade*. Ruvolo (1994: 89-95, 102) also convincingly argues that chimpanzees and humans are most closely related. According to her, the sole data set favouring a chimpanzee-gorilla clade is based on repeating DNA sequences of involucrin, a skin-protein gene. Repeating sequences are more subject to mutations which may result in homoplasy: that is, in the course of evolution, equivalent sequences from distinct species may come to resemble one another more closely than they did in earlier generations, giving a false impression of relatedness. There are no comparable processes for *non-repeating* sequences which would give rise to a degree of homoplasy that would explain the genetic similarity between chimpanzees and humans. The trichotomous explanation, she says, is not tenable, because, although there are significant studies which favour the chimpanzee-human alignment and some which favour the chimpanzee-gorilla alignment, there is very little support for a human-gorilla alignment. If there had been a trichotomy, the three possibilities should be more equally supported by the evidence.

Waddell and Penny (1996: 53, 56-60) examine data from a number of genetic studies and conclude that the existence of a chimpanzee-human lineage after separation from the gorilla is consistently favoured. Discussing dates of Sivapithecus fossils (as ancestral to the orang-utan) for calibration, they favour a split between humans and chimpanzees about 6.5 million years ago.

It appears, then, that chimpanzees are genetically closer to us than are gorillas, although that was unknown until the 1980s. It is clear that we have no closer relationship to bonobos (pygmy chimpanzees) than to common chimpanzees, although it was possible to hold that view in the 1980s. Dental comparisons bear out the genetic evidence, showing that the pygmy chimpanzee and common chimpanzee have different but equally derived features (Kinzey 1984: 84).

It is reasonable therefore to conclude that our closest relatives among the apes, therefore, are the two species of chimpanzee, and the latest common ancestor lived not much more than 4.5 million to 5 million years ago.

Australopithecines, upright hominids after 5-6 million years ago

Numerous remains have been found in eastern and southern Africa, from the period from 4.5 million years ago to less than 2 million years ago, of creatures which were like chimpanzees in size, some larger, and had ape-sized brains, but which walked upright. They are known collectively as the australopithecines. While 'australopithecine' was originally intended as a subfamily designation within the zoological family Hominidae, the word is commonly used nowadays to refer to a collectivity of forms, dated between 4.5 million and 1 million years ago and assigned to several genera, which more or less resemble the fossils assigned to the first identified genus of these hominins, *Australopithecus*.

An upright stance is evidenced by the morphology of limb bones and especially of the pelvis. Pelves of australopithecines are broad and short like those of

humans, not long and narrow like those of apes. Also, the foramen magnum, where the spinal cord emerges from the skull, lies in a central position on the skull base, as it does in humans and slightly more forward than in apes.

Early australopithecines, from before 3 million years ago, were small, about 1 metre tall. Small, lightly built forms with a variety of skeletal characteristics continue in the fossil record until after 2 million years ago, and are known as the gracile australopithecines. Among them were forms which most likely became ancestral to human beings. But there were also larger forms, described as the robust australopithecines. These are usually assigned now to a separate genus, *Paranthropus.* On the basis of dental and jaw development, the latter seem to have become adapted to a diet of tough vegetation and roots. They disappear from the fossil record about 1 million years ago.

Skeletal characteristics of the australopithecines

Major differences between the australopithecines and the great apes are seen in the jaws and teeth. The dental arcade in most of the australopithecines is usually rounded or parabolic, as in the human condition, rather than U-shaped, with the premolars and molars forming parallel rows as in the great apes, but in some early cases show an intermediate conformation. The canine teeth do not project beyond the other teeth so as to interlock between upper and lower jaws, as in the great apes. However, in the earliest australopithecines it appears that the canines were larger than in the later species, producing an intermediate condition. In all the australopithecines, the incisors are smaller than in the chimpanzee, let alone gorilla or orang-utan. The molar teeth, however, are much enlarged, and the premolars, in *Australopithecus africanus* and even more so in *Paranthropus,* have become enlarged and molarized: that is, they have broad grinding surfaces as if they are extra molars. In this respect the australopithecines, especially *Paranthropus,* are ultra-human in comparison with apes (Le Gros Clark 56-62; Klein 1989: 146).

The change in proportions between front and cheek teeth would appear to indicate a shift in habitual diet from food such as fruit and shoots, which required to be bitten off and pierced, to food which required to be chewed.

The most completely preserved skeleton of any australopithecine is still that of AL-288, discovered in 1974 at Hadar in Ethiopia, often called 'Lucy'. This specimen, dated to 3.2 million years ago, has generally been discussed under the designation *Australopithecus afarensis,* but has also been referred to a separate genus and called *Praeanthropus africanus* (Wood and Collard 1999). While AL-288 was clearly an australopithecine and therefore not an ape, early study of the skull showed numerous relatively apelike features, including subnasal prognathism greater than that of later hominins and canine teeth much larger in males than females, as well as the small cranial capacity.

The postcranial skeleton exhibits long arms relative to legs, curved foot and hand phalanges and long toes, and the funnel-shaped rib cage, narrow at the top, all of which resemble the condition of the African apes and indicate an aptitude for tree climbing. At the same time, AL-288 was clearly a biped, as shown by the forward and downwardly directed position of the foramen magnum on the base of the skull, from which the spinal cord emerges, foot structure with a human-like arch, the

orientation of femur and tibia, and the short, broad, and therefore humanlike pelvis, which completely contrasts with those of apes.

For all their apelike retentions such as the ability to brachiate, the australopithecines were unequivocally hominins and not apes. Tobias (1998: 283-285, 302-303) summarizes their hominine features: upright posture and bipedalism, abandonment of knuckle-walking, human-like small canine teeth, human-like hands, long thumbs and precision grip, and some features of the brain as shown by endocasts.

Earliest australopithecines

Further fossils assigned to *Australopithecus afarensis* have been recovered from Laetoli in Tanzania from levels between two volcanic layers dated at 3.76 and 3.46 million years ago. Footprints found on a former lake shore within those levels imply that the bipeds who made them, though small and not human, possessed a striding humanlike gait (Klein 1989: 142-145).

Recent studies of later species dating between 3 million and 2 million years ago, *Australopithecus africanus, Paranthropus robustus* and *Paranthropus boisei*, have shown signs that they also retained a tree-climbing adaptation, while being bipedal on the ground. The *Australopithecus africanus* skeleton STS14 has a short broad pelvis which signalizes the bipedalism of this species. *Australopithecus* foot bones from Sterkfontein indicate bipedalism but also show a divergent big toe. *Paranthropus* foot bones indicate that these hominids were better adapted than *Australopithecus afarensis* to bipedalism while on the ground, and yet remained efficient climbers. This combination of faculties for both arboreal and terrestrial locomotion is not seen in living primates (Andrews 1999: 556; Johanson and Edgar 1996: 136-137; Wood and Collard 1999: 68).

In 2001 a skull was announced from Kenya which dates to 3.5 million years ago. It has a large, projecting maxilla, a small endocranial capacity and, whereas *Australopithecus afarensis* has midfacial projection like later gracile australopithecines, this skull, as reconstructed, has a flat face. In this respect it resembles the robust australopithecines but also the much later KNM-ER 1470 *(Homo rudolfensis)* skull, as well as modern humans. On the ground of the resemblance to 1470 and modern humans, the specimen has been assigned to a new genus as *Kenyanthropus platyops* and declared to be a human ancestor (Leakey et al. 2001).

At two locations in Kenya remains of a species earlier than *Australopithecus afarensis* or *Kenyanthropus* have been recovered. They are dated to between 4.2 million and 3.9 million years ago and have been assigned to *Australopithecus anamensis.* While resembling other australopithecines they have canines larger than in *afarensis,* and the leg bones combine human-like features with some apelike muscle insertions (Leakey et al. 1995, 1997, 1998).

Until recently the earliest known australopithecine was *Ardipithecus ramidus,* remains of which from Aramis in Ethiopia have been dated to 4.39 million years ago. Cranial parts exhibit a chimpanzee-like morphology, yet have humanlike features such as a shortened cranial base and reduced mastoid, and the postcrania likewise

evince a combination of humanlike and apelike characteristics. It has been described as the most apelike hominin ancestor known. Other fragmentary specimens from Baringo and Kanapoi in Kenya, discovered decades earlier, may be referable to this species (White et al. 1995a, 1995b). This species has been mooted as a possible ancestor for all later australopithecines (Johanson and Edgar 1996: 37-38; Stringer and McKie 1993: 14).

A solitary mandible from Tabarin in Kenya dates between 4 and 5 million years ago. It has been designated *Australopithecus praegens*. An even older mandible from Lothagam in Kenya dates to 5.5 million years ago; its intermediate condition leaves its affinity to ape or hominin undetermined (Wolpoff 1980: 124; Johanson and Edgar 1996: 39).

In late 2000 twelve fossils, consisting of fragmentary arm and thigh bones and teeth, were recovered from levels dated between 6.2 million and 5.6 million years ago. The shape of the upper part of the thigh bone is said to indicate bipedality. This, together with the small, thick-enamelled teeth, has allowed the discoverers to assign the specimens as hominin, with the designation *Orrorin tugenensis* (Senut et al. 2001; Aiello and Collard 2001).

Brains of the australopithecines

The australopithecines were upright walkers, but they did not share the other major sign of humanity: a large brain. In modern humans, measurement of the volume of the cranial cavity gives a mean figure of 1300-1400cc; the documented range extends from below 900cc to 2200cc.

Mean endocranial capacity of common chimpanzees is given as 385-390cc, pygmy chimpanzees 350cc, and gorillas a little over 450cc (Wolpoff 1980: 142; Zihlman 1984: 180). The endocranial capacity of *Australopithecus afarensis* is given as 380-450cc (Klein 1989: 140). That of a number of specimens of *Australopithecus africanus* falls within the range 428-485cc, and of *Paranthropus* within 500-530cc (Kennedy 1980: 221). The putative earliest species of *Homo, Homo habilis,* is said to have an endocranial capacity of 510-750cc, with a mean of 630cc; this range includes the KNM-ER 1470 skull with much the largest capacity at 750cc, a specimen later assigned to *Homo rudolfensis* (Klein 1989: 156).

Holloway believes that the early hominin brain, despite its small size, had already undergone changes in the human direction. Specifically, there had been an expansion of parietal association cortex at the expense of visual cortex, the development of a human-like third inferior frontal convolution, also known as Broca's area, which is involved in vocal utterance, and pronounced asymmetry of the left and right cortex, indicating handedness (Holloway 1996: 90-95). The latter two interpretations are based on the 1470 specimen, which is the only calvarium of the period sufficiently well preserved to allow determination of the relevant features.

Subsistence of the australopithecines

Until quite recently, it was commonly thought that human ancestors even at the stage of the australopithecines practised large-scale hunting of medium and large herbivores on the African savanna, and indeed that big game hunting was one of the

factors which made us human (e.g. Ardrey 1966). Bands of early hominins were imagined systematically hunting and killing prey, large ungulates such as antelope and waterbuck, and lugging the carcasses back to a home base to be shared out with the family. However, as a result of more detailed analyses of the archaeological evidence since the 1960s, this 'hunting hypothesis' now has few adherents. A site such as Swartkrans in South Africa, where one might have envisioned a home base, a living floor bearing stone tools, fossil remains of hominins and of the antelope kills which they brought home, is now seen to contain random collections of debris washed into what was once a cave. The hominin remains, no less than those of antelope, are the relics of predation by leopards (Tattersall 1995: 199-200).

It appears that australopithecines and early species of *Homo* following them obtained meat principally by scavenging the remains of kills made by carnivores such as hyenas and leopards. This conclusion is warranted by the presence at some archaeological sites of animal bones bearing cut marks evidently made by stone tools, and the presence also on those bones of marks of carnivore teeth showing that the bone was pierced or gnawed. Now, if this were the whole evidence, it could be argued that carnivores scavenged the remains of kills made earlier by hominins, and indeed it has been so argued (Bunn and Kroll 1986). The question is whether the hominins or carnivores had first access to the carcasses.

On a *prima facie* view, it does seem improbable that australopithecines, who stood three to four feet tall, would be able successfully to compete with leopards, which, although they are solitary hunters, could grasp an australopithecine's head in their powerful jaws by sinking their canines into its skull, as one evidently did (Tattersall 1995: 200), or with hyenas, which hunt in aggressive packs and sometimes even chase leopards away from their kills. Until they were able to use fire, hominins would have been at some disadvantage against those powerful fanged predators.

In a series of papers, Binford (e.g., 1989: 282-290, 297-382) has shown that the hypothesis of hunting of medium and large animals by early hominins is not sustained by the evidence. To deal with the question of first access, one example will suffice here. On the 'Zinjanthropus floor' at Olduvai Gorge in Tanzania, Oldowan stone tools lay where they were discarded by the early hominin users. They were distributed in certain concentrations forming well defined patterns. Also scattered on this floor were fragments of cut-marked bone, the flesh from which was presumably eaten by the hominins. Now, the bones were distributed in the same concentrations as the tools. Experiments in which fleshy bones were left out on the savanna for modern hyenas to scavenge have shown that hyenas will carry away and gnaw the bones, and randomly scatter them some distance from where they were originally deposited. The fact that the bones on the Zinjanthropus floor were still distributed in the same patterns as the tools indicates that the bones, left there by hominins, were not subsequently touched by hyenas. The hyena teeth marks were therefore imprinted before the hominins had access to the bones (Binford 1989: 353-355).

As discussed later, chimpanzees at the present day hunt and kill monkeys and other small mammals, but they do not kill large or medium ungulates. One can conclude that australopithecines probably hunted small animals, but only scavenged the remains of larger kills made by savanna carnivores.

Undisputed Homo

Fossiliferous layers from both East and Southern Africa from the period 1.75 million to 1.5 million years ago have delivered crania and postcranial bones, including an almost complete skeleton, which have been assigned to a species *Homo ergaster*. In both size and morphology, those remains are distinct from australopithecines in the direction of *Homo erectus* and *Homo sapiens*. Despite the early date, cranial capacity is 850 and 880cc in the two measurable specimens, overlapping the capacities of *Homo erectus* a million years later. Yet the rib cage of the WT15000 skeleton is proportionately narrower at the top than in later *Homo*, recalling the apelike, funnel-shaped condition found in the gracile australopithecines (Tattersall 1995: 187-189, 194; Johanson and Edgar 1996: 72-73, 180-186; Stringer and McKie 1996: 28-30; Klein 1989: 201-202). *Homo ergaster* is the earliest undisputed species of the human genus.

APPENDIX 6B

Chimpanzee mentality

Here I discuss evidence for the degree of social intelligence and awareness which chimpanzees may have. Comparisons are made with human faculties in the same field.

I am not going to discuss laboratory experiments designed to elucidate chimpanzees' problem solving, numerical and linguistic abilities. This is because, while the latter show some of the potential of chimpanzees, they do not represent the naturally occurring behaviour of chimpanzees, let alone the behaviour which may have characterized our remote ancestors.

Sense of self

While gorillas and gibbons do not recognize themselves in mirrors, chimpanzees and orang-utans do. In a laboratory experiment, the subject is anaesthetized and a coloured mark made on the forehead. When the subject comes to, the animal is observed and does not touch the forehead, showing no awareness of the mark. Then a mirror is introduced; the subject is able to see the mark, and touches the forehead (McGrew 1992: 58).

Chimpanzees can relate the movements of an image in a mirror or on a television screen to their own body movements. This form of self-recognition is not found in Old World monkeys or in elephants, although some workers regard the experiments on the latter as inconclusive (Rogers 1997: 29). Discussing these investigations, Van Hooff (1994: 268, 270) suggests that chimpanzees have a mental representation of some of their own characteristics. Self-recognition appears to me to require that the subject have a sense of self or identity.

Juvenile chimpanzees have been observed to imitate adults. In the large captive colony at Arnhem in the Netherlands, an adult female had a deformity which led her to walk in a hunched up fashion. A number of juveniles followed her in single file round the enclosure, imitating her posture. When an adult male suffered a hand injury in a dominance fight, and favoured that hand when moving around, juveniles were observed to copy his movements (de Waal 1982: 80, 135).

Chimpanzees brandish sticks and branches during aggressive displays, as if they know that these props enhance the impression which their display makes on others. They are also known to put objects on themselves as adornment (Van Hooff 1994: 269; Köhler 1927: 91-95). I add that Köhler's apes were in captivity, and that he did not attribute the propensity for self-adornment to awareness of appearance but to a heightened sense of the body, which he asserts humans also enjoy when decked in finery.

Deception and awareness of the perspective of others

Chimpanzees are able to control their own behaviour so as to conceal knowledge from others. They, and also baboons, show high levels of tactical deception, whereas other monkeys show little or no sign of this behaviour. At the

Gombe Stream Reserve in Tanzania, a chimpanzee observed the human provisioner placing a cache of bananas. When another, more dominant, chimpanzee came along, the first averted his gaze from the cache and waited until the second departed, so as to enjoy the bananas undisturbed. On another occasion, the same happened, but this time the second chimpanzee, on leaving the immediate area, stayed behind a tree and peeped out. When the first approached the cache, the second was able to intervene and secure bananas for himself (Byrne and Whiten 1992: 609, 614).

Male chimpanzees generally invite females to mate by holding their body upright with legs apart so as to expose their erect penis. A subordinate male was doing this when a dominant male appeared. The subordinate immediately covered his penis with his hand (Van Hooff 1994: 269).

Chimpanzees were able to discern that a human who watched food items being hidden ('the knower') would know where they were, while a human who had his eyes covered during the hiding process ('the guesser') would not know any better than the chimpanzees themselves (Van Hooff 1994: 270).

Reviewing the evidence, Quiatt and Reynolds (1993: 160-161) conclude that chimpanzees manipulate, monitor and regulate their own and others' behaviour. A deceiver projects a representation of himself and his intentions, monitors the deceived chimpanzees' responses and alters his behaviour accordingly. Deception is cogent evidence of intentional behaviour.

Dominance and its emotional concomitants

Chimpanzee adult males expend a great deal of effort, and take the risk of injury, for the sake of status in their community. There is a dominance hierarchy, in which the females also figure, but one male becomes the alpha male, and generally remains in that position for months or years. The dominant male is 'greeted' by the others in that they approach him with submissive postures not adopted for other males.

The alpha male receives respect and support from the community, especially the females, in return for keeping order. Dominant males give protection when one community member is threatened by another: for example, at Gombe when the cannibalistic Passion and her family were threatening a mother and baby, the dominant male intervened to protect the victims (Goodall 1986: 143). Whereas females and juveniles tend to favour their friends and offspring, adult males are impartial. For example, one female took away the baby of another; the mother followed, yelping and whimpering; when the alpha male saw this, he came over and displayed aggressively in front of the kidnapper, who immediately returned the baby to its mother. De Waal (1982: 149, 171ff, 196-197) gives numerous examples of such intervention by dominant males.

By keeping order, the alpha male will be supported by the females in any conflicts with other males, will be able to mate more frequently than other males, and will retain the respect of the rest of the community, receiving their submissive 'greetings'. There is no doubt that males seek positions of dominance.

De Waal (1982: 204) draws a parallel with human societies. In tribal communities with chiefs, the chief generally receives many gifts, but traditionally

does not exploit the others by keeping all the wealth to himself. (That privilege perhaps awaits the development of kingship with bodyguards.) The chief is expected to return favours by giving feasts and supporting the needy.

As a male matures, dominance over the other males is achieved by repeatedly challenging an existing alpha male. A challenge takes the form of displaying, with hair on end, a loud crescendo of pant-hoots, charging and sometimes buffeting the challenged male. The process of replacement in one case at Arnhem took nine weeks. In this period, the challenger may form a coalition with another male against the alpha male, and will seek the support of females (de Waal 1982: 86-139, 188).

During the period of uncertainty, the alpha male who is being challenged may lose confidence. When they are afraid, chimpanzees bare their teeth in a 'grin of fear'. After one challenge, the alpha male involuntarily showed the grin of fear but immediately covered his mouth with his hand; a moment later, the same grin appeared again and he pressed his lips together with his fingers, as if attempting to conceal his fear from the others (de Waal 1982: 106, 133).

During a conflict chimpanzees avoid looking each other in the eyes, but do look each other in the eyes during reconciliation. After a conflict, a male may seek reassurance from another by reaching out a hand; the other male may allow him to touch his scrotum, evidently a sign of trust (de Waal 1982: 113, 138; Goodall 1986: 61, 180; *cf.* Genesis 24: 2, 9; 47: 29).

Chimpanzees' behaviour towards one another is characterized by an expectation of reciprocity. De Waal suggests there are two rules: 'one good turn deserves another' and 'an eye for an eye'. For example, a dominant female supported an adult male in chasing a second adult male. When the second adult male later displayed aggressively at her, she turned for support to the adult male whom she had helped. He did nothing to protect her. She immediately turned on him, chased him across the enclosure and bit him. It was as if he had not fulfilled an obligation (de Waal 1982: 207). However, unprovoked aggression, with the infliction of physical injuries on conspecifics, takes place not only in captivity, where chimpanzees are thrown together without the possibility of escape from their community, but also in the wild, where, if anything, the violence reaches greater extremes, both within and between communities (Goodall 1986 *passim*). This *unprovoked* aggression testifies against a sense of fairness or justice. One might argue that a seed of morality is present, but it has yet to germinate.

States of mind

Those who observe individual chimpanzees and their interactions over long periods become familiar with their behaviour and temperament and are able to detect moods and mood shifts. On that basis, they can justify stating that chimpanzees feel apprehension, fear, distress, annoyance, anger, rage, enjoyment, sexual excitement, social excitement, joie de vivre, boredom, joy, sorrow (Goodall 1986: 58, 118).

Chimpanzees appear to possess 'triadic awareness': that is, the ability to assess relationships not only between oneself and another but between two others. On the ground of the complexity of their behaviour, de Waal attributes *rationality* to chimpanzees, but asserts that this does not entail *consciousness,* giving cogent

examples from humans, as follows. Human beings may wish to influence and indeed take power over other people and develop ways of doing so, without being aware that power is their goal. Small children may find techniques of dominating a household without being aware of what they are doing (de Waal 1982: 118, 182, 193-194). I think what he means here by 'consciousness' is what I might call *reflection* or *self-awareness,* and what has been called *conscious attentiveness* in contrast to mere *conscious sensibility* (Noble and Davidson 1996: 14).

Chimpanzee intelligence, notwithstanding tool-using activities, is exhibited chiefly in the social sphere. Relationships in primate society are complex; conflicts often occur and are of long duration. Reynolds (1986: 57-58) notes that 'the price of thinking is worry', and reports studies which show different levels of stress hormone in individual primates in different social (dominance) positions. Situations frequently arise in which an individual has to cope with conflicting personal interests. For example, a macaque mother may wish to be groomed by another female, but takes the risk that the other female, if allowed close, may snatch her baby. A dominant male cannot afford to be too violent, otherwise he may be deposed. Chimpanzees, gorillas and monkeys such as macaques appear to live worried lives. It is suggested that one of the reasons why individuals leave their natal group may be to escape irresoluble social problems.

It appears that chimpanzees must experience what in humans would be called states of mind, such as anticipation, confidence, loss of confidence, fear, distress, concern about how others perceive them, an appreciation of how things appear to others. In that sense, they are aware. I do not think there is evidence that they reflect on their feelings. Most of the time, I suggest, human beings do not reflect either (*cf.* Jaynes 1976).

Some authorities would take issue with the assertion that chimpanzees have states of mind, on the ground that such an assertion is anthropomorphic. They prefer that allegedly more parsimonious explanations should be sought, not requiring chimpanzee awareness. In this debate I side with de Waal (1991: 297, 301), who argues that the most parsimonious explanation of the behavioural similarities between humans and chimpanzees is that they share similar psychological processes. He suggests that skeptics about chimpanzee awareness could be challenged to prove the *absence* of intentionality, self-awareness and planning, and cites Asquith (1984: 138), who says, 'Anthropomorphism can be said to occur only if it is presupposed that self-awareness and purposeful behaviour are uniquely human'. If we do not presuppose anything but observe the behaviours of the two species and note convincing similarities, we are not engaging in anthropomorphism if we conclude that the underlying psychological processes are probably also similar.

There has been much discussion in the literature on whether chimpanzees exhibit culture or 'proto-culture' or are in this respect aligned with other animals as lacking culture, which is held by some to be strictly a preserve of *Homo sapiens.* I do not propose to review, let alone engage in, this discussion, as I believe it is largely a matter of definition. Here I am not setting out to show how clever chimpanzees are or how similar to humans. For my purpose, even if chimpanzees manifested very little behaviour that was human-like, it would still be necessary to be clear about how

they behave. What matters is what chimpanzees (here, as surrogates of our ancestors) actually do, not how we classify, regard or interpret what they do.

To be sure, any observation inevitably contains interpretation. In the case of chimpanzee studies, one is struck by the personal and (without prejudice) anthropomorphic tone of Goodall in reporting her observations (1971, 1986) and of de Waal (1982), in contrast with the quantitative, tabulated analyses of behaviour given by some other scientists, for example Ghiglieri (1984). However, it is the descriptions of observed events, given throughout by de Waal and by Goodall in the above-cited publications, and indeed also given by Ghiglieri (1984: 110-115) in the form of transcribed field notes, that are the primary data; the tables, analyses and conclusions about chimpanzee way of life drawn from them are a second-order representation of the information.

Goodall's and de Waal's style personalizes the chimpanzees, recounting their activities as if describing conscious beings with intentions, in a manner alien to purely quantitative studies. Are they giving us less information or more by doing so? In no way do I seek to devalue quantitative analyses. However, it seems to me that to ignore the possible presence of intentions, feelings, awareness and mental states, which can only be inferred from the objective behaviour, is to omit a dimension of chimpanzee life which, if it exists, is much more significant than any purely quantitative information. And I concur with de Waal that the best explanation of similarities between human and chimpanzee behaviour is similarity (but not of course identity) of the underlying psychology.

According to Hillyard and Bloom (1982), the neurological activity of humans and other primates, and indeed some lower animals and birds, shows many resemblances, from alpha rhythm during relaxation to the cycles of slow-wave and rapid-eye-movement sleep. For example, they note parallels between the changes in EEG of squirrel monkeys when exposed to a novel stimulus and those of human beings when they report paying conscious attention to a stimulus. Association areas of the cortex, which are believed to be the seat of the most complex mental acts, seem to have similar functions in all higher primates. They conclude that processes resembling consciousness may take place in other animals besides humans. Therefore I believe it is reasonable to proceed on the assumption that a mental dimension of chimpanzee life does exist and is highly significant.

Chimpanzees are not humans; they are similar but not the same. However, rather than see chimpanzees as mentally more developed and closer to humans than one might have thought, the evidence inclines me to wonder whether humans, especially in the sphere of dominance and status, are mentally less developed and closer to chimpanzees than one might have thought. If the behaviour which chimpanzees manifest is insufficient to count as evidence of mental states, then it may be that, regarded critically, the behaviour of human beings much of the time would also be insufficient. In that case, we ought to be led, in the manner of Descartes, to doubt the existence of other minds in humans. It might be instructive to try to specify what behaviour would count as evidence of mental states, but one suspects that certain authorities would deliberately draw up any such specification in such a way as to exclude non-humans.

Some authorities propose that culture, symbolic behaviour, language, self-awareness and perhaps even the idea of other minds did not develop gradually during the evolution of the genus *Homo,* but only came about late and very suddenly, all these phenomena appearing together within a few millennia not much before 35,000 years ago. This abrupt appearance of symbolic behaviour and the rest coincided with the emergence of anatomically modern *Homo sapiens,* and is referred to as the 'human revolution' (*cf.* Stringer and McKie 1993; Mellars 1996). According to that conception, the onus of proof is on those who would assert that earlier species of *Homo,* let alone australopithecines or apes, possessed self-awareness, personality and symbolic behaviour – in short, possessed mind – to provide evidence of those intangibles. I think this view is mistaken. It appears to me that, if a discontinuity in evolution is to be asserted, then the onus of proof is on those who wish to assert the discontinuity, not on those who presume continuity. In this case, we are dealing with an assertion of discontinuity in the evolution of mind.

Given the complexity of chimpanzee behaviour, and its resemblance to human behaviour in ways where both differ from the behaviour of monkeys and other apes, chimpanzees appear to represent on a scale of mental development a position some way between monkeys and humans. To that degree, their existence is evidence for a continuum of behavioural and mental complexity between lower animals and ourselves, rather than for a discontinuity. I believe the continuum has indeed existed, or, more correctly, has been enacted or traversed, by our ancestors the australopithecines and earlier *Homo.* To be sure, if we could look back from a timeless vantage on the development of mentality through prehistory, we might observe that there had been a discontinuity, a 'great leap forward', somewhere between chimpanzees or australopithecines on the one hand and modern humans on the other. But it may be possible to argue for a discontinuity between chimpanzees and other apes, in that chimpanzees express a *combination* of behaviours and inferred capacities which is not shared with any other animal except ourselves. Included in this combination are such behaviours and capacities as sense of self, cooperative hunting, inter-community (inter-tribal) aggression, learned tool making, and social interactions which take account of others' perspectives and are conducted on the basis of expectations of reciprocity. One might argue that they have crossed a threshold which separates them, together with ourselves, from the rest of the animal kingdom.

Rather than think in terms of thresholds and revolutions, I think it is more profitable to examine what the creatures under discussion, whether chimpanzees or ourselves, actually do, and infer as best we can from that and from archaeological evidence, what our ancestors may have done. And in this exercise, on the principle of parsimonious explanation, continuity of mentality should be assumed.

APPENDIX 7A

Some objections to the animatist hypothesis

Bird-David: Socially biased cognitive skills

An objection to Guthrie's analysis is raised by Bird-David (1999: S71). According to Guthrie's account, animism (animatism) results from a mistake of over-interpretation of what we perceive in our surroundings (Guthrie 1993: 54). Bird-David asks why, if they 'retrospectively recognize their animistic interpretations as mistakes', primitive people 'culturally endorse and elaborate those mistakes'. In other words, they build religions around the concept of putative gods, the idea of whose existence is derived from the mistaken perception of humans in their surroundings, even while knowing that these perceptions are mistaken. She suggests that such a theory downgrades the cognitive abilities of primitive people.

I am of course concerned with religious *origins* rather than with the *maintenance* of religious belief among recent primitives. I reiterate that the religions of recent tribal people should not be seen as unaltered relics of the original religious categories; primitives are not primordials. It is not the cognitive skills of the present-day Nayakas that are being impugned, if anyone's are, but those of the primordial hominids who first had the idea of a daemon. It is not the case that each generation reinvents the idea of a daemon: in a tribal society each generation inherits the beliefs of the predecessor generation. But at some point, not recently but in remote prehistory, the belief in question had its beginnings, in a rudimentary, uncodified, unelaborated form and, in this case, probably even unexpressed in language.

The answer to Bird-David's objection is, I think, as follows. Firstly, primordial people did not retrospectively recognize their animistic interpretations as mistakes. The only mistake that was recognized on occasions was that of having expected a human being as a participant in a scene when on investigation they discovered that humans were not present after all. Further, I suggest that the primordial humans or prehumans who were led to a belief in non-human personal beings indeed recognized on individual occasions that their initial perceptions of *human* presences were mistaken, but did not always accept that there were no personal beings *of any kind* in the vicinity. On some occasions, for some individuals, the experience of sensing a personal presence may have been so intense that, even if on investigation no trace of a human were found in the vicinity, the individual may have continued to believe that something sentient was present, but concealed or invisible. Such a putative sentient, human-like but non-human personal being is what we may call a numen or spirit being.

Today, a rationalist would find that the hypothesis of non-human personal beings associated with inanimate phenomena is superfluous, because, according to rationalism, all the phenomena which we observe around us can be explained in terms which do not require the existence of such beings. In such a sense we may retrospectively recognize that the idea of personal non-human beings is a mistake. For primordial people, humans or prehumans, the idea of non-human personal beings would not have been seen as a mistake. On occasions, the apparent perception of

human beings in a vicinity may have been discovered and recognized to be a mistake, but the apparent perception of *some kind* of personal being would not be discovered to be a mistake. For primordial people, as it would be for us in the absence of wider knowledge, the 'hypothesis' of non-human personal beings did not appear to be a mistake but was perfectly reasonable, and around it they could build other religious categories. The cognitive abilities of primordial people, let alone recent primitives, are not in the least impugned by Guthrie's theory.

Bird-David (1999: S78) raises another objection, saying that the acknowledged common tendency to 'animate' (animatize) is engendered by socially biased cognitive skills, not by 'mental confusion', a reason she attributes to Tylor, or by 'wrong perceptual guesses', a reason she attributes to Guthrie.

However, according to Guthrie, it is precisely the socially biased cognitive skills that bring about what we can see as wrong perceptual guesses. Socially biased cognitive skills equate to the propensity to see and attempt to deal with things, animate and inanimate, as if they have personality. Bird-David wants to say that human beings have socially biased cognitive skills because humans live in societies, as do chimpanzees, and much of our cerebration is concerned with social dealings among our own kind. But the socially biased cognitive skills cause us not only to deal with other humans as humans but also sometimes to deal with non-humans as humans. Thus is animatism engendered. Dealing with non-humans as if they were humans is, by rationalist standards applied in hindsight, a mistake. When we do that – for example, when we treat a stone or a waterfall as if it had a personality – then we make a wrong perceptual guess, precisely because we have not perceived clearly that the stone or waterfall does not have a personality. However, in the face of the unknown, acting as if something is animate, as if we should relate to it, when we are unable to tell for sure whether we should do so or not, is the outcome 'of normal perceptual uncertainty and of good perceptual strategy' (Guthrie 1993: 54).

Thus there is no incompatibility between Guthrie's theory and Bird-David's contention that animatism is engendered by socially biased cognitive skills.

Karsten: No preanimist stage

More serious objections to what he called the *preanimist* theory are raised by Karsten (1935).

In the first place, he takes issue with the proposition that, preceding animism, there was a primal stage of religious development during which a vague conception of impersonal supernatural or magical forces held sway. Those forces, or aspects of one force, are denoted by the words 'mana' and 'tabu' (Marett 1914: xxviii, 73-121). In Marett's exposition, *mana* is the supernatural in its positive aspect, not in the sense of 'good magic' but a supernatural, weird force viewed neutrally or with philosophic interest as a phenomenon; *taboo (tabu)* is the supernatural viewed in its negative aspect as something to be avoided or against which protection is required. While 'mana' and 'tabu' are Polynesian words, similar concepts of forces such as they are supposed to denote seem to be widespread, and occur under local names in various parts of the world: for example, in North America, the concepts *wakan* and *orenda* are said to correspond to *mana*.

Karsten adduces numerous ethnographic examples to show that the impersonal supernatural force or *mana* is not something which exists in its own right or subsists in inanimate objects. On the contrary, in all cited cases it is believed to emanate from or be wielded by living human beings or dead ancestors. In other words, it is essentially a magical power derived from the supernatural status of sorcerers or the souls of the departed. As such, the concept of *mana* or *tabu* presumably cannot precede that of soul.

In answer, first, it is conceivable that there could have been a concept of an impersonal force prior to the development of the concept of soul, and that, once the idea of soul had come into currency, then the supposed force came to be explained as something which proceeded from powerful souls. However, there is no evidence for this, and I see no reason to argue for it. In the present inquiry I do not seek to deal further with *mana* or *tabu.*

Second, Karsten himself states (1935: 30) that two separate notions are involved in the preanimist theory of his time, and are frequently confounded by other workers. One is the notion of an impersonal power, *mana,* and the other is animatism. It is only animatism, or the animatist theory, that I argue for here. However, Karsten also argues against animatism itself, as follows.

It is a universal belief among savages that unwelcome natural phenomena such as thunder and eclipses are caused by powerful evil spirits, 'often conceived as disembodied human souls'. In the case of the Kafirs running out to threaten the thunderstorm, he cites Kidd as saying that some natives believe thunder is caused by 'some old ancestor', while others believe it is caused by 'hostile spirits'. From his own fieldwork, he informs us that the Jibaro (Jívaro) of South America believe that during a storm dead warriors are running through the air. It was the custom of the Jibaro to frighten away their supernatural enemies in the storm by brandishing their lances. He cites authorities to show that the Fuegians and the Chaco Indians believed that rain, snow and hail were sent by evil spirits (Karsten 1935: 35–37, 133). In South America all high hills were regarded with awe by the Indians, who believed they were inhabited by spirits. The spirits were 'by nature the souls of departed Indians, notably those of medicine men'. Among the Sami of northern Scandinavia, the spirits of the dead took up residence in the mountains. The worship of caves is to be understood because caves once served as human dwellings, the dead were often buried in them, and so the spirits which haunted them were those of departed men, according to some South American Indians. Water spirits inhabiting lakes and streams are of the same type as those of mountains and rocks: they are souls of dead people. All Finno-Ugrian peoples believed that the malevolent spirits of lakes and streams were the souls of people who had drowned in them (Karsten 1935: 126-129).

In sum, Karsten's view is that animatism is not to be found at all in primitive societies, whereas animism is universal. He traces the worship of inanimate nature, plants and animals to the presence of the souls of dead humans in those objects (1935: 61-160).

To counterargue, firstly, on close scrutiny of many of the instances which he cites, Karsten does not explicitly show or even state that they were cases of animism, in the strong sense of once-human or once-animal souls inhabiting inanimate objects. For example, the hostile spirits which the Kafirs believed to be present in the

thunderstorm are not claimed to be necessarily the souls of the dead. Karsten's source of information, Kidd, states that the Kafirs were 'hazy' on the point that thunder is caused by 'some old ancestor'. Kidd gives a number of explanations of thunder offered by various tribes, including hostile spirits, brown birds which spit fire at the earth, an enormous bird flapping its wings, and white birds which make lightning. In Mashonaland, apparently, thunder was attributed to a fat baby, which descended to earth and was instantly taken up again. None of these phenomena are stated to have any relation to dead people (Kidd 1904: 119-122).

Karsten further states, 'As of the Greeks, so of the lower cultures in general, the wind demons seem, *in most cases,* to be conceived as spirits of the dead' (1935: 135, emphasis mine). Among the Finno-Ugrians the heavenly bodies were thought to be animated, but 'there is no direct relation between this cult and the cult of the dead' (1935: 139). In various cultures, man-made objects are sometimes treated as animated: among North and South American Indians, pots were believed to have souls; Karsten says, 'in many, *perhaps most cases,* they are simply human souls which may have taken up their abode in these objects' (1935: 141, emphasis mine). However, the only evidence adduced is that the spirits of such objects appear in human form. Instances of equivocal ethnographical evidence such as these can be found throughout the text. Suffice it to say that the evidence for animism rather than animatism in all cases is not conclusive.

Secondly, the presence of undoubtedly animistic ideas about inanimate objects in numerous societies can be explained by a tendency, acknowledged by Marett, for animism to supersede animatism, as people assimilate a variety of ideas to a single explanation. Once people had the concept of soul, it would not be surprising if they began to attribute souls to other objects already personified. Once ancestor worship had taken root, it is possible that the spirits of non-human objects were interpreted to be the souls of dead people which had transmigrated into those objects. It is easier to believe that this development of animatism to animism took place than to believe that, until the concept of the human soul had been accepted, people did not personify inanimate objects at all.

Thirdly and most importantly, Karsten himself plainly describes cases of animatism in man and the higher animals. The first example is one of the best descriptions of animatist behaviour I have found, and I quote: 'A horse in the dark shies away from the threatening form of a tree stump beside the road, although in daylight he would not notice it at all. In his [the horse's!] imagination it becomes a strange living being with power perhaps to injure him; the instinct of self-preservation, therefore, prompts him to be on his guard against the unknown.' High mountains with dark abysses, gloomy caves, old hollow trees and so forth, all these awaken in man 'a sense of something supernatural and divine'. 'The sense of the supernatural can be traced even in the higher animals. ... The fear and awe which domestic animals display during thunderstorms or earthquakes is evidently closely akin to religious sentiment as it appears in man' (Karsten 1935: 27). Presumably we are not meant to suppose that horses and other domestic animals have a concept of soul, or that they believe frightening natural phenomena are produced by the souls of their dead ancestors.

He goes on explicitly to discuss the tendency of animals and man to personify natural phenomena, as follows. The savage projects upon natural objects the consciousness of himself as a subject with will and emotions. The idea of a boundary between animate and inanimate does not, in any case, play a part in the savage assessment of the world. The savage is limited to the sentient world of himself and other living beings, with whom he enters into relations. So when a striking object comes to his attention, it occurs to him that this may be 'some living yet strange being' (1935: 28-29). To my mind, this is an account of animatism, not animism.

Karsten explicitly accepts Tylor's explanation of the origin of the concept of soul (1935: 57). The concept of soul is not shared with the higher animals and therefore must have originated at some time in human prehistory. In contrast, given the continuity of the human animatizing response with that of the higher animals, it would be strange if there were not, in human prehistory, an animatist stage preceding the era when the concept of soul originated.

APPENDIX 8A

Classical objections to Tylor's dream theory

Lang's objections

Lang criticizes Tylor's theory on two grounds.

The first objection is a logical one. According to Tylor (1924, I: 285), it appears to primitive savages that all objects are animated, the subjects of personal life and will. In that case, how could they seek to distinguish between a living and a dead body, and conclude that the living body possessed a soul and the dead one not? For if everything, including stones and lumps of wood, is animated, then a corpse must be animated just as much as any other object (Lang 1898: 58).

Recall that Tylor seeks to account for the *origin* of animism. So at the time when the idea of soul first occurred to primordial people, they were not yet animists. They did not yet believe that animals, stones and other objects had souls. That came later, after the conception of the human soul. So the objection evaporates.

The other objection is that the primordial thinker is made to derive what Lang calls a less abstract concept, the *soul,* from a more abstract concept, the *life.* He says, 'Early man excogitated (by the [Tylor's] hypothesis) the abstract idiom of Life before he first envisaged it as breath or shadow. He then decided that mere breath or shadow was not only identical with the more abstract conception of life, but could also take on forms as real and full-bodied as, to him, are the hallucinations of dreams or waking visions' (Lang 1898: 59).

Lang's idea of 'Life' is too abstract, and Tylor does not demand it. All that is necessary is that the plain observation be present occasionally to the minds of early people that a dead body is no longer active, does not move by itself, and in particular does not breathe. That is why the breath may be *identified* with the life. It is not that there comes to be a connection between two preexistent concepts, the breath and the life, but that there is no distinction: there is one concept. The *life* which the primordial person could conceive is simply the movement of the body, in particular the breathing. Once that stops, he or she observes that the body will not move again by itself. So it dawns on the primordial observer that the soul is the life (*cf.* Tylor 1924, I: 433). He or she does not deduce anything; the idea just occurs to the person. When respiration stops, the life has gone. Substitute 'breathing' or 'movement' for 'life' in Tylor's argument, and we have something more akin to the primordial idea which I think he intends by 'life'.

It is commonplace to recognize that many words for *soul* denote breath (e.g. *spiritus, psyche, ruah,* ...). Paton (1921: 2, 19, 69-71, 154, 200-202) gives a list of these words from numerous cultures of divers language families.

Of course a sleeping body and the body of someone in a trance continue to breathe, so one might object: why would early people think that the soul leaves the body during sleep or trance, if the soul is the life and the life is the breathing, which obviously continues in the body? In answer, perhaps they noticed that breathing is shallower during sleep, and certainly the body is less active than when awake, so

they thought that the life was less completely present. Inactivity may not always be observed of a body when the owner is in trance or hallucinating – sometimes quite the reverse – but that could be understood as a struggle of the soul to leave the body. One can easily imagine how an untutored primordial man or woman could be moved to these ideas.

In any case, it is unrealistic to imagine the primordial thinker reasoning, making deductions and being perplexed by contrary conclusions. What we must envisage is merely the occurrence of ideas which more or less made sense to someone trying to understand his or her world. People, and animals for that matter, constantly seek to interpret their environment. It is entirely comprehensible that early people would seek to make sense of what was happening in death, sleep or trance. Moreover, people at all times, including the present, have been able to assent to completely incompatible ideas and beliefs without a qualm (Persinger 1987). It is a little too much to ask of the ancient savage philosophers at the first glimmering dawn of metaphysical speculation that they should excogitate the law of non-contradiction and immediately apply it to all their thinking, as well as conceive the 'doctrine' of souls.

Durkheim's objections

Besides questioning the likelihood of savage philosophers (Chapter 8), Durkheim produces further objections to both animism and what he calls *naturism*. Animism here is the Tylorian theory that the concept of spirit being is an extension of the concept of soul. 'Naturism' here refers to the theory that the phenomena of nature are worshipped without having soul-like spirit beings assigned to them. It is more or less what, following Marett, I call *animatism* (Chapter 7).

Durkheim's principal objection to *animism* runs as follows (1915: 69-70). According to the animist theory, the soul is constructed out of the vague images which occur to people in dreams and hallucinations. Spirit beings (daemons) and gods are then constructed out of the concept of soul. Therefore the forms under which religious powers have been represented, the symbols by which they are thought of – gods and spirit beings – have no denotation beyond the dreams, the nightmares, the illusions of private minds. But historically religion has been the fount from which law, morals and science have sprung, and religion provides the energy which people must have to live. It is inadmissible that religion should be made up of a tissue of illusions. Durkheim concludes, 'It ought to be a principle of the science of religion that religion expresses nothing which does not exist in nature; for there are sciences only of natural phenomena.'

Firstly, we cannot say *a priori* that the belief in souls and spirit beings is illusory. All that the Tylorian need say is that we have in dreams and the like the origin of man's concept of the soul. We cannot say that we do not have souls, thus that the belief is illusory, just because the phenomena which led our ancestors to conceive the concept of soul may have been dreams, trances and other states of consciousness whose content we may now regard as illusion.

Secondly, Durkheim confounds a belief in souls and spirit beings with religion as a whole. This might seem to be a problem with the original Tylorian theory, according to which religion is based upon the belief in spiritual beings and

belief in spiritual beings is a minimum definition of religion (Tylor 1924, I: 424, 426). However, on my approach, belief in the soul and in spirit beings are only two of many religious elements. A religion is generally made up of other components or elements besides these. Some of the other elements within a religion may be equally 'illusory' but others again may correspond to some reality.

It is possible that belief in souls and spirit beings should be erroneous and illusory, while the religion as a whole is still a force for good or to the advantage of the population which possesses it. In a given society, some other element or group of elements within the religion may be delivering law, morals and science, and the 'energy' which people need to live. It is possible that such another element may be independent of the belief in souls or spirit beings. For example, divination from the flight pattern of birds or from entrails, with a view to determining a safe or profitable course of action, does not require the existence of spirit beings or the human soul. The same applies to myth, which could be concerned with ancestors who perform edifying moral actions, yet without those ancestors or anyone else being required to have souls. The moral and social aspects of a religion may not have much connection with spirit beings. The Golden Rule, 'Do under others as you would have them do unto you', is found in several religions or philosophies and does not seem to depend on a belief in spirit beings but rather on the experience of reflective individuals living in society.

Thirdly, even if the elements or aspects of a religion which deliver the advantage are dependent on the belief in spirits or souls, even if the elements of belief in souls and spirit beings are themselves the ones that deliver the advantage, that is not necessarily a problem for the Tylorian theory. The moral values promoted by a religion may be supposed to be handed down by prophets inspired by a god, so that there is a dependency of morality on the concept of spirit or god. But it is perfectly possible for an advantage and for good to proceed from an illusion. Those who do not subscribe to a given modern religion may still concede that advantage accrues to those who accept it. Historically, it has been an advantage in certain centuries in certain countries of Europe to be Protestant rather than Roman Catholic; and the reverse also applies. A Catholic can concede this while not agreeing with points of Protestant doctrine – that is, while taking those points of doctrine to be false or illusory – and vice versa. It is an advantage to be Moslem in Saudi Arabia, where public practice of Christian worship is currently not allowed. On a more personal level, a dramatic film entitled *Brighton Rock* (1948) illustrates a point about the worth of an illusion. At the conclusion, the bereaved heroine hears a recording made by her deceitful boyfriend just before his violent death. When making the recording, he says 'You think I love you' and then proceeds, as he thinks, to disillusion her with contemptuous words. But the recording is faulty, and when she listens to it she hears 'You think I love you – I love you – I love you ....' Owing to this fault, she is able to continue believing a comforting falsehood, and the illusion sustains her in her bereavement.

Further objections are presented, which I cover below. They have been, I think, fully rebutted by Lowie (1948), and I expand on his rebuttals.

Durkheim points out that under certain conditions the soul is supposed to be independent of the body, yet it cannot be radically separated from it, because it

animates the body. The notion of the dualism of soul and body does not exclude a deeper unity and interpenetration of the two beings. Tylor's concept of the soul or double is too simple to account for this duality and unity (Durkheim 1915: 56).

It is clear to me that Tylor is not trying to account for sophisticated ideas of duality combined with unity. He is trying to account for the origin of the basic concept of soul, which we find in societies throughout the world, in some cases overlaid with or combined with more complex notions. We should not expect primordial people to have worked out a consistent ontology for an area of thought which has taxed metaphysicians for more than two thousand years. Whether the idea of soul is combined with contradictory notions among various given groups of primitive people is irrelevant (*cf.* Lowie 1948: 110).

Dreams in which people see other people or places at a distance would be more easily accounted for by the idea that one had long-distance vision while sleeping, rather than demanding the idea of the soul (Durkheim 1915: 56).

Firstly, dreams are only one type of phenomenon alleged to give rise to the concept of soul. Secondly, it is not at all obvious that the notion of telescopic vision is less complex than the idea of soul. Thirdly, telescopic vision would not account for dreams in which the dreamer seems to be visited *at home* by other people known to be far away or dead. Fourthly, the point is not to think of alternative theories whereby the primordial person could explain dream life, but to identify phenomena which might have motivated him or her to conceive the notion of soul, and dreams are one such phenomenon (*cf.* Lowie 1948: 111).

Dreams often relate to past experiences. Even if the soul or double can travel in space, no savage would theorize that it could travel in time. It would be much easier for early man to regard such dreams as what they are: vivid recollections (Durkheim 1915: 56-57).

Firstly, dreams indeed sometimes replay past events. When dreams show scenes from the past, there is no reason to expect that a primitive person would suppose that they are any more than recollections, as Durkheim says, even if a dead person appears in them. But if there is a dream in which someone known to be dead appears and acts as if the scene is the present day, or participates in new activities which he or she did not carry out when alive, or says something to the dreamer about some issue of present-day concern, then this is clearly not a memory and would not be interpreted as such. This sort of dream might suggest that the dead are still around, and able to be encountered and interact with the living in dreams.

Secondly, Tylor's theory is a theory *for us* in our attempt to understand prehistory. He is concerned to draw attention to phenomena which might suggest the idea of soul. He is not delineating a theory which primordial people *themselves* might have constructed to account consistently for all dreams (Lowie 1948: 112), about the past, the present or the future. Theories are our domain. From the primordial person we expect only this: that what he or she experienced should have suggested a vague notion.

If a primordial person dreamed at night about another member of the tribe having certain adventures, then he or she could check the next morning with that other person and find out whether they dreamed the same things. In most instances

there would be discrepancies, therefore no reality would be attached to the adventures of dream life (Durkheim 1915: 57).

Firstly, people seen in a dream may not always be available the next day to be interviewed. Secondly, the details of dreams can be hard to remember. Even if a person interviewed a friend about dream experiences, it is unlikely that the friend would always recollect his or her own dream, if there had been one at all, or recollect it sufficiently clearly to be able to deny the adventures which the questioner might allege. The friend's response would depend on suggestibility and on his or her social status and consequent freedom or otherwise to disagree with the questioner (Lowie 1948: 110). It is not by any means certain that a negative response would frequently be given. If a negative response were given on a particular occasion, then the questioner might accept that his or her dream that time had been an illusion. But if on another occasion the friend concurred, or without being certain acknowledged that some joint adventure might have occurred, the questioner would be able to assume that the dream was significant.

There is no reason to believe that primordial people would feel the need of an explanation of dreams. Plenty of phenomena pass us by every day without our feeling the need to have an explanation of them all (Durkheim 1915: 57).

Firstly, primitive people do not evaluate all dreams alike, as Durkheim (1915: 59) himself points out. The Dieri, an Australian tribe, sharply distinguish ordinary dreams from those in which deceased relatives or friends appear. Dreams figure importantly in the lives of tribal people (Lowie 1948: 108; Hallowell 1960: 378). They may be assigned great significance and be told to friends and relatives even if they are not interpreted as having anything to do with adventures of a soul or out-of-the-body experiences (Stewart 1969). Dreams matter and interpretations are sought.

Secondly, the point, again, is not that primitive people sought an explanation of dreams. Recent tribal people seek to *interpret* their dreams, that is, to find out what they may signify. Tylor does not claim that they seek *explanations,* that is, theories about what is going on when they dream. All that is claimed is that the experience of adventures in dreams suggested to early people that there was a part of a person which was active while the body remained inactive.

Of course Durkheim's principal concern is not with the origins of religion but with its function in society, and he seeks to dismiss Tylor and his like as offering accounts which are trivial in comparison with his own analysis of religion as a formative force in society. His own functionalist theory of religion, of religion as it operates within societies, forming an intrinsic part of society and representing society to its members – as opposed to a theory of religious origins – is equally not my concern here. It is not clear to me how, on Durkheim's theory of what religion is, what I regard as elements of religion would actually originate. To take a particular case, it is not clear how the concept of invisible spirit beings would come into existence, or why it should come into existence. For me, if we are seeking origins, an account has to be given in terms of what individual people in prehistory could have done or thought. Tylor has done this better than most.

APPENDIX 10A

Identity of an Eleusinian psychotropic agent

Ergot

My principal sources for the following are Hoffmann (1978: 25-35) and Ruck (1978a: 47).

In the Middle Ages there were epidemics of hallucinations, convulsions and deaths, sometimes attributed to witchcraft, which have since been diagnosed as due to ergotism, poisoning by flour contaminated with ergot. The Salem witchcraft episode has been plausibly linked with an outbreak of ergotism. The last major outbreak was in France in the early 1950s. Ergot is the sclerotium of a fungus *Claviceps* which is parasitic on cereal grasses such as rye, barley, wheat, millet, and 'wild rye grass' (*Paspalum distichum*), also known as tares. The dark brownish ('purple') sclerotium adheres to the grain-bearing ear or the stalk just below it, looking almost like an extra ear, and, if the grain is not harvested, eventually falls off. Where it lands on the ground, mushrooms may sprout, which are the fruiting bodies of the fungus. Different varieties of ergot grow on different grasses, and different varieties on the same grass. Wild rye grass is said to be particularly prone to infestation by ergot.

The effects of ergot are due to the psychoactive alkaloids present in varying concentrations. These include ergine (lysergic acide amide), ergonovine (lysergic acid propanolamide), and others of the ergotamine and ergotaxine groups. Lysergic acid amide is the nucleus common to most ergot and some other alkaloids. The morning-glory seeds used to prepare the strongly hallucinatory *ololiuqui* of the Aztecs, still used in Mexico (Schultes 1990: 17-22), contain ergine and ergonovine, as well as lysergic acid hydroxyethylamide. In 1943 Hoffmann synthesized LSD, lysergic acid diethylamide, another ergine derivative. LSD is the most powerful hallucinogen known. The main alkaloid in the magic mushrooms traditionally used by the Mazatec of Mexico for divination is psilocybin (Schultes 1990: 10). For a given quantity, Hoffman says ergonovine is five times as potent as psilocybin, and LSD is twenty times as potent as ergonovine. In ergot of barley and wheat, the main alkaloids are variants of ergotaxine and ergotamine, but ergonovine is also present. Only the last is soluble in water. However, in ergot of wild rye grass (tares), the main alkaloids are ergine and lysergic acid hydroxyethylamide, which are both water-soluble.

In the *Homeric Hymn,* Demeter plants barley in the Rarian Plain adjacent to Eleusis. The barley used to prepare the *kykeon* for the Mysteries would presumably have been harvested there. Ancient Greek herbalists would have recognized the varieties of cereals and the ergot which grew on them. If ergot-contaminated barley were used to prepare the *kykeon,* the water-soluble ergonovine would have been ingested in the potion. If the priests had also used the wild rye grass also to be found in the Rarian Plain and even more probably infested with ergot, they would have added ergine and lsyergic acid hydroxyelthylamide to the concoction. The ergot could have been powdered in any case. Hoffmann has no doubt that herbalist priests

attached to the sanctuary of Eleusis would have learned over the centuries which varieties and combinations generated the most potent effects. Ruck points out that the priests may have cultivated fields there specifically to grow ergot-contaminated cereals, given that large quantities must have been required for the thousands who attended the Mysteries every year (1978c: 117-118). The composition of the *kykeon* was probably the ultimate secret, known only to the Hierophant and his assistants.

In 415 BCE there was a scandal at Athens when the Mysteries were profaned. The famous military commander Alcibiades and others had been conducting some part of the ceremony in their own homes in the course of drunken revels. Ruck's hypothesis is that herbalists other than those of Eleusis may have become aware of developments in production of the ingredients for the *kykeon,* and made use of this knowledge to create their own for the drinking pleasure of wealthy citizens. This would explain the fact that the Eleusinian authorities were not involved in the profanation: evidently it was possible to conduct it without possessing genuine 'sacred objects' from Eleusis. This also indicates that the *hiera* were not specific objects such as Mylonas's putative relics from Mycenean times (Ruck 1978a: 37; 1978b: 53; 1978c: 79).

In addition to the *kykeon,* Ruck reports mention in some Christian writers of a cake, *pelanos,* which was served to initiates, possibly to break the fast of the sixth day before the *telete*. The cake was made of barley and wheat, and was broken into pieces and served to all participants (1978b: 55). If this information is correct, then of course the cake provided an additional opportunity to administer a dose of any and all the ergot alkaloids, water-soluble or not. However, *pelanos* and *kykeon* together begin to resemble Christian bread and wine rather suspiciously.

Problems of the ergot hypothesis

Valencic (1994) raises some difficulties, as follows. Two forms of ergot are involved: ergot of barley, *Claviceps purpurea,* and ergot of paspalum (wild rye grass), *Claviceps paspali.*

In the former, the water-soluble alkaloid is ergonovine. This is used today obstretrically as a uterotonic. As women participated in the Mysteries, there is a question about the possibility of miscarriage. Self-experiments with ergonovine by modern researchers, including Hoffmann, produced variable effects. These were doses of the pure chemical, not aqueous infusions from ergot. Small doses gave visual distortion accompanied by leg cramps and lassitude, salivation and vertigo. At the largest doses, hallucinatory effects were comparable to those of low doses of psilocybin, but the somatic effects were inhibitingly painful. The natural ergot alkaloids are narcotic as well as hallucinogenic, and the experimenters were additionally reduced to a dreamy state. These do not sound like Eleusinian experiences of ecstasy, and there is no ancient report of unpleasant side effects.

Instead of ergot of barley, ergot of wild grass, containing the water-soluble *ololiuqui* alkaloids, could have been the active ingredient of the *kykeon*. However, to my knowledge, no self-experiments have been published. Valencic observes that if cattle graze on pastures of wild grass infected with *Claviceps paspali* they contract a neurological disorder manifested in tremors and failure of coordination. *Claviceps paspali* contains five tremorgenic substances. If these are not water-soluble, then it is

just possible that a *kykeon* could have been made from ergot of wild rye without inducing unpleasant or dangerous tremors in the initiates (Valencic 1994: 329-334). However, there would have been a risk that some particles of ergot might remain in the potion unless it were strained very thoroughly. The putative *pelanos* cake, if made with flour containing dry powdered ergot and therefore potentially all the tremorgenic substances, was presumably not made from *Claviceps paspali.* Even so, there remains the testimony of Plutarch *apud* Stobaeus, quoted in Chapter 10, of shuddering and shivering. Perhaps the herbalists of Eleusis had perfected the quantities and combination of ergot ingredients so as to reduce the risk of tremors, but were unable to eliminate the latter completely without compromising a sufficient psychoactive effect.

Valencic argues that the question will remain open until someone conducts what he calls the 'acid test' of experiments which duplicate the infusion process and human ingestion of the resulting potion, rather than administration of synthetic pure ergoline alkaloids. On the basis of pure ergonovine experiences, the case for ergot does not look convincing. If ergot is not the source of the mystical experience of Eleusis, another psychoactive plant must be sought. Some have suggested opium in combination with ergoline alkaloids. Representations of Demeter showing poppy flowers and seed capsules are well known (Kerenyi 1967: 75; Ripinsky-Naxon 1993: 159). However, opium is said to inhibit the effects of LSD, and might therefore be an antagonist of other ergoline alkaloids. Opium on its own is an unlikely candidate because opium dreams do not resemble the vivid waking hallucinations which one envisages for Eleusis. The possibility of a psilocybian mushroom is reopened (Valencic 1994: 333-335).

Bulbous plants at Agrai

Ruck notes that Greek mythology has several stories of maidens being carried off while gathering flowers (*e.g.,* Eurydice, Creusa, Helen), and suggests that this may be a metaphor for being overcome by psychoactives. The abduction of Kore happened in the course of gathering some bulbous plant, according to Aristophanes.[1]

In the course of the Lesser Mysteries, a bulbous plant was 'hunted' at Agrai. It is not known whether all initiands took part or merely assisted in the hunt. The bulb was not cultivated but found wild, being an antithesis of the cultivated grain. It might therefore metaphorically abduct the maiden but not send her back. Certain depictions on urns connected with Eleusis seem to show mushrooms, the stalks being too thick to be the stems of higher plants. Many depictions have conventionally been interpreted by classical scholars as phalluses, but some quite clearly are mushrooms (Ruck 1978c: 87, 105, 115, 121-122; 1986: 165).

If the bulbous plant at Agrai was hallucinogenic, mushroom or not, could it have become a secret ingredient of the *kykeon* or *pelanos* at Eleusis later in the year? Given that the original cult at Eleusis was a local and family affair, one is inclined to wonder whether, with hardly anyone to initiate each year, an initiation ceremony could take place on anything like the scale of later events, or even at all. Is it possible that mystical initiation was a component of the cult only after the Athenians took it over and connected it with an originally unconnected cult at Agrai involving a hunt

[1] Aristophanes, *Clouds* 187-192. The word *bolbous* is sometimes translated 'truffles', *i.e.* fungi.

for mushrooms? For all I know, these questions may have been answered, but in the present context I am obliged to desist from the hunt.

APPENDIX 10B

Identity of a *soma* and *haoma* psychotropic agent

The major contenders for the original and principal active ingredient are the fly agaric mushroom, *Amanita muscaria,* found in forests of temperate and arctic latitudes, and Syrian rue, *Peganum harmala,* a weed common in the Middle East.

Fly agaric

The fly agaric has been the principal psychoactive plant used by shamans and tribespeople in Siberia and Central Asia, and also in North America. Among them it produced stupor, euphoria, invigoration, frenzy, inspiration, dreams and splendid, wonderful and extraordinary images (Wasson 1968: 156, 159, 239, 244-245, 256-257, 260, 262, 282).

From the apparent references to the *soma* drink or plant in the Rig Veda, the points in favour of the fly agaric are held to be these. (1) No mention is made of leaves, branches or flowers, as one would expect for a higher plant but not for a fungus. (2) *Soma* grew only in the mountains. The fly agaric grows in woodland at the base of birch and conifers, not on the plains. This explains why in post-Vedic times other plants were substituted, as the real *soma* became harder to obtain and eventually unavailable. (3) The pressed juice was a tawny colour, as is the extract of fly agaric. (4) *Soma* shone like the sun and was radiant. This is said to be an allusion to the bright red cap of the fly agaric, which also can be seen from a distance in moonlight. (5) *Soma* abandons its envelope. This is said to be an allusion to the white envelope which encloses the mushroom when it first grows, until the red cap bursts through, whereupon the envelope falls back, also revealing the stem or stipe. (6) In *soma* rituals urine is referred to. In Siberia the urine of one who has eaten fly agaric is also psychoactive; it is consumed by other people, who then also become intoxicated. Of all the hallucinogens, this characteristic applies only to the fly agaric (Wasson 1968).

The raw fly agaric contains muscimole and ibotenic acid. Drying induces the ibotenic acid to convert to muscimole, increasing the psychoactivity of the fly agaric. It has been shown that muscimole is not metabolized and is indeed present in the urine of a subject (Schultes and Hofmann 1992: 85).

In post-Vedic times substitutes were used in the rituals, which were no longer expected to produce ecstatic states. Wasson (1968: 96-100) argues that substitutes were employed because the genuine *soma* plant could not be obtained except by trade from the northern highland areas.

In a review of Wasson's 1968 book, the Sanskritist Ingalls (1971) accepts the identification of *soma* with fly agaric. He regards previous candidates, including *Ephedra, Sarcostemma,* rhubarb, hops and cannabis, as failing to meet the Vedic descriptions. However, among other points, he does not accept the alleged urine-drinking reference. One of Wasson's crucial verses is Rig Veda VIII.4.10, in which Indra is addressed: 'Drink *soma* as much as you want, pissing it out day by day'. Ingalls says this refers to Indra drinking it so much he simply urinates it every day: there is no suggestion that anyone will drink the urine. Another striking verse is

IX.74.4, which Renou, the translator favoured by Wasson, renders as 'The lords [storm gods] with full bladders piss the *soma* quick with movement'. Ingalls translates it as 'The fructifying men piss it down as it is sent'. He imagines this hymn as describing the ritual preparation of *soma*. The priests have pounded the fly agarics and pressed the juice, and now they pour it through 'the god-inviting skin', the woollen filter, into a trough containing water and milk. The 'pissing' is a metaphor of pouring. Another Sanskritist, O'Flaherty, contributes a chapter in support of Wasson's theory in his 1968 book. However, in her later translation of selections from the Rig Veda (1981), she renders the relevant passage as 'The swollen men piss the *soma* set in motion'[1], but interprets 'the swollen men' as storm gods in the guise of rain clouds.

Kuiper's (1970) review doubts the value of the Rig Veda as evidence for pre-Indian practice, as it was primarily sacred tradition and composed on the Indian plain, not in the earlier homeland. Wasson, regarding post-Vedic Indian literature as irrelevant on the ground that it already contains ritualistic interpretation and mystification, believes that the hymn writers of the Rig Veda knew nothing of later philosophizing but were describing actual experiences (Wasson 1970: 291-292). In the same vein, Ingalls (1971: 191) says: 'It seems to me to add not a little to our understanding of Vedic literature to know that an hallucinogen lies at the base of the second [*soma*] cycle of Vedic hymns'.

For me, the problem with the fly agaric hypothesis is the nature of the experiences produced. Wasson (1968: 74-75) describes his own experiment with it, along with colleagues in Japan. Taking it fresh, they enjoyed no effects at all, with the exception of one Japanese researcher who toasted his fly agaric over a fire before eating it. He had a striking mystical experience. Other experimenters have also encountered wide variability, and some think the fly agaric experience inadequate to account for the Vedic descriptions (Devereux 1997: 77-78). Present-day 'psychonauts' experiment with drugs and some write up their experiences on the Internet. Checking through these, I again found mixed results. Most reported virtually no consequences at all, although they were allowing the fly agaric to dry out in preparation, as has always been done by Asiatic shamans. One said *Amanita* intensified the mood, whether upbeat or depressive. One person has eaten several fly agaric daily, attaining no more than a certain euphoria and certainly no mystical experience; for him and his family it is a general tonic. One subject, on the other hand, described the most powerful illumination of his life, with an out-of-the-body experience and controllable flight.

It is to be expected that effects will vary. Factors must include the soil conditions in which a plant has grown, the quantity and density of the substance consumed and the subject's physiology and neurological predispositions, let alone set and setting. A shaman in training is taught what to expect by an established practitioner, and usually interprets his or her experiences accordingly (Sullivan 1994: 31-32). In western recreational use, I suspect the attitude of 'I want an experience' may militate against achievement of the objective. Even so, for an hallucinogen as striking as *soma* seems to have been, one would expect pharmacological effects to be

[1] On first encountering this verse in translation as 'The swollen men piss the flowing *soma*', I imagined a line of stoned-out sadhus with tightly closed eyes and ecstatic grins urinating copiously into bowls, which their acolytes wait eagerly to take up.

powerful enough in their own right to cause something to happen for the subject, whatever the preexisting mood.

Harmel

Syrian rue or harmel, *Peganum harmala,* is proposed by Flattery and Schwartz (1989), who take their prime evidence from the Avesta, rather than the Rig Veda. They argue that the Vedic descriptions are unreliable.

Harmel is readily available all over the Middle East as a weed which springs up in the waste alongside human occupation sites. It is thought to have been spread round the Mediterranean by Moslem migrations, but is not known to have occurred in India until some time before 1030 CE (Flattery and Schwartz 1989: 35-42), two thousand years after the Vedic era. This would seem to preclude its use as *soma.* However, Flattery and Schwartz (1989: 7-9) argue that one need not accept the hymns of the Rig Veda as genuine accounts of ecstatic experiences. On their hypothesis, the hymns no longer represent *soma* as intended to cause intoxication in the priests themselves, as it is represented in Iranian tradition, but as an offering to Indra. This is a purely Indian development, but already appearing in the oldest Indian texts, which therefore do not represent tradition from the proto-Indo-Iranian era. As this conclusion is incompatible with Ingalls' analysis outlined above, I find it problematical.

The strongest argument for harmel is that it contains the β-carboline alkaloids harmine and harmaline, which are among the psychoactives in the South American *ayahuasca* or *yagé* drink. Given the reliability of *yagé* in producing mind-altering effects, on a *prima facie* basis this would make harmel a very plausible candidate. Among the recorded effects of *yagé* have been euphoria, flight, visions of sublime beauty, vivid colours, gorgeous scenery, stark terror, encounters with wild animals and nature spirits, and 'phantasmagoria' (Harner 1968; 1973b; Naranjo 1973; Reichel-Dolmatoff 1972: 86-96).

On the other hand, *yagé* is not made from rue but mainly from the vine *Banisteriopsis caapi,* which contains harmine, harmaline and d-tetrahydroharmine. It is usual, however, for the South American Indians to add a variety of other plants to the brew, using different additives to alter the psychoactive effects for different occasions. Particularly noted are *Banisteriopsis rusbyana* and *Psychotria viridis,* which do not contain harmala alkaloids but large amounts of N,N-dimethyltryptamine and other tropane alkaloids. The activity of the tropane alkaloids is inhibited by enzymes in the body, but those enzymes are in turn inhibited by β-carboline alkaloids. The combination therefore results in much more powerful hallucinatory effects than any of the plants would have on their own (Schultes 1990: 38-39; Callaway 1999). Devereux (1997: 76) reports opinion that harmaline is a minor constituent of *yagé* and the observation that there is no evidence of additives to *haoma* in ancient Iran.

Other views

Some workers such as Ripinsky-Naxon (1993: 165, 248) continue to support the fly agaric hypothesis. Sherratt (1995: 30) supports the harmel hypothesis in the sense that harmel may have been one of several constituents of *soma.*

Sherratt (1995: 29-30) and Rudgley (1998) draw attention to recently excavated fortified oasis sites in Turkmenistan. At one site, Gonur South, dating from the early second millennium BCE, there is a structure believed to be a fire temple, which has an inner shrine in which ceramic bowls and strainers have been found. Some bowls contained remains of cannabis and *Ephedra*. A site dating from the middle second millennium has a shrine with mixing and straining equipment, but no plant remains. Finally, a late second millennium site, Togoluk 2, also has a shrine, in which were bowls containing the remains of *Ephedra* and poppies. This region is within the presumed early-second-millennium homeland of the proto-Indo-Iranians, and fire rituals were the characteristic inheritance of the Iranians and Indians. Rudgley concludes that combinations of *Ephedra,* opium and cannabis were the original *soma* or *haoma*, and emphasizes that this hypothesis is the only one supported by archaeological evidence. The only problem I see with this hypothesis is the nature of the experiences, because, if the evidence of the Rig Veda and the Avesta is accurate, then an hallucinogen seems to be indicated rather than a soporific or euphoriant.

APPENDIX 10C

Identity of an Egyptian psychoactive agent

Mandrake (*Mandragora*) has been venerated in many countries because of the humanoid shape which the roots sometimes assume. As with other solanaceous plants including henbane and belladonna, the whole plant, but especially the seeds and roots, contains the tropane alkaloids atropine, hyoscyamine and scopolamine, of which the last is the most active. Scopolamine is also the main psychoactive constituent of a concoction made from the leaves and stems of *Brugmansia* by Andean natives for healing and other shamanic practices. Scopolamine intoxication has been said to include visual distortions, a violent phase with convulsions, hallucinations of sight, taste and smell, followed by narcosis during which hallucinations may continue (Schultes and Hoffman 1992: 73, 86-90, 129).

Three alkaloids have been found in the *white* water lily: apomorphine, nuciferine and nornuciferine (Schultes and Hoffman 1992: 66-67). Emboden discusses at length the use of the white lily among the Maya in Central America, as indicated by archaeological remains, including depictions. There, in the view of Dobkin de Rios (1974) and Emboden (1981), priests consumed the white lily to achieve altered states of consciousness. Dobkin de Rios (1974: 151) theorizes that the cosmology, in particular their emphasis on time, of the Maya owes much to trance experiences in which the subject's sense of time and space was altered.

In a recent television programme[1], an attempt was made to verify whether the blue lily has psychoactive properties. The flowers were soaked in water and the water and petals consumed. Subjects reported feeling carefree and 'cheeky'. A report on the Internet of a more recent experience describes sedation, emotions in abeyance, and absence of the sensory overload which the subject associates with other drugs. Another describes no effect for the first two hours, then placidity and giggliness, some visual distortion, then twelve hours' sleep, followed by another whole day of serenity, dreaming and an affectionate attitude to other people, summarized as 'two days of bliss'. In these cases the subjects not only had drunk a boiled tea made from the flowers and rhizomes but also smoked some material. There was no nausea. Without accurate details of quantities and methods, the descriptions are not of clinical value, but the quality of the experiences seems consistent: tranquillity, goodwill, euphoria. While the lily appears not to be an hallucinogen, one suspects that the blissful effect if prepared along with an hallucinogenic extract of mandrake would be striking.

[1] *Sacred Weeds*, Channel Four Television 1998, hosted by A. Sherratt.

APPENDIX 11A

A psychodynamic theory of religiosity

A comprehensive account in Freudian psychodynamic terms of the religious attitude in general and of the calling of the religious specialist is given by La Barre (1970a: esp. 17-19, 93-115), taking into account previous work (*e.g.,* Róheim 1930). His approach is of merit in that it deals with the genesis of ideas in individuals. I think insights are to be gained from La Barre, but find some areas problematical. In summarizing below I do not wilfully seek to distort. First, I summarize the alleged ontogenetic origins for all humans of religious ideas. Later I come to religious specialists in particular.

People in general

Before birth, no demands are made on the foetus. When it is born, it utters a cry of rage because it has been deprived of the oceanic security of the womb. The baby makes demands, which are met by the mother. What it wants it receives. At some point, the baby is potty trained. It learns that things which the body does can be bad and that control of the body has to be learned. 'Sphincter morality' is the beginning of ethics.

At some point, the father intrusively comes on the scene. The child is disturbed to find that it is not the only recipient of the mother's affection and attention. Even apart from Oedipal feelings, the child's relation to the father is ambiguous. The mother loves and gives unconditionally, but the father makes demands. The child wishes to be loved and accepted by the father, but finds he (the discussion is mostly about boys) has to meet expectations to gain approval. The father rewards the righteous and punishes the wicked. The father is the first power the child has encountered which does not respond to wishes by granting them. The automatic granting of wishes by the mother has encouraged a sense that wishful thinking produces desired results. The child has a sense of being able to command all he wishes. This sense manifests in adult supernatural dealings as magic. The father's immovability is a body blow to the infantile sense of omnipotence. In addition, the boy child discovers that the father has a penis and so does he; he also discovers that there are girls, who do not have penises. This means 'in naïve male terms' that girls once had penises but have had them taken away as a punishment for being bad, and they are therefore to be despised. From the girl's point of view, on the other hand, the absence of a penis represents 'cosmic unfairness'. The boy child now has a 'castration' fear, that his penis (not his testicles, curiously) may be removed, presumably by the father. The child has to reconcile himself to the negation of his own omnipotence and to the existence of an omnipotent being outside himself in the person of the father. He cannot command the father as he can the mother; but he can plead and earn rewards. This sense manifests in adult supernatural dealings as religion.

As the child grows to adulthood, he learns with dismay that even his father is not omnipotent. The failure of the father and of other men to demonstrate perfect fatherhood by being omnipotent does not cause the child to give up the sense that

there ought to be a perfect omnipotent father. Instead he projects his wish into the supernatural realm, where the result is God. In early childhood, the father has himself been a '*mysterium tremendum et fascinosum*'.[1]

On this theory, a full 'psychosexual' adjustment to adulthood results in what I would call a rationalist approach to the world. Growing up, the adult accepts that neither he nor the father is omnipotent, and does not yearn for a return to a blissful foetal or baby state. Instead, he accepts the world as an external Other which is unresponsive to wishes or pleading, because it is indifferent and impersonal, but which can be manipulated by the application of objective knowledge about it. He looks forward to learning about the world through common sense and science. An imperfect adjustment, arrested at the oral stage of only personal awareness, is manifested by the magical attitude, which retains the infantile conception of personal omnipotence. The person thinks that symbolic actions unconnected with their object but laden with wishing can make things happen. Another imperfect adjustment, reflecting arrested development at the phallic stage, which includes more developed social awareness, is the religious attitude. This retains the conception of the father's omnipotence, but stripped from the father and projected onto a deity. The person thinks that praying and good deeds can bring rewards.

The religious specialist

As for the religious specialist, his or her attitudes to the supernatural represent in a heightened form those of the average person who has not made the adjustment to fully functioning adulthood. If the male child does not accept his own non-omnipotence or the non-omnipotence of the father, then he is locked into a 'phallic paranoid' stance. The boundary between god and self is fluid. The same individual may be a prophet speaking for his god, indeed 'the priest of his father's godhood', or the god himself. The paranoid becomes the vatic personality. In society, the vatic personality takes the form of magician or priest: which form is assumed depends on cultural context and the individual's stage of psychosexual development. The male vatic personality evinces a degree of femininity: he cajoles the father like a girl or is passive instead of expressing himself in a direct, manly way. The feminine qualities of the shaman and priest are manifested in the ethnographically widespread phenomenon of shamanic (and priestly) transvestism.

When a practitioner commands spirits, he is a shaman; when he is possessed by them and only does what they command, he is a prophet: in either case, the spirits or god are really himself. When he submits to a personified god outside himself and beyond his command, the practitioner is a priest. In all cases, the practitioner has abandoned the growth to manly independence in favour of a paranoid means of coping with imagined omnipotence. The magician operates at a stage in which other people have not yet been discriminated: he manipulates 'a vaguely impersonal *mana*'. The priest despises and fears the magician because he has outgrown that stage but could regress to it. The priest operates at a stage in which other persons

[1] La Barre (1970a) throughout uses the word *fascinosum,* not Otto's *fascinans*. According to Lewis and Short, *fascinosus*, occurring classically only as a comparative *fascinosior,* means 'having a large *membrum virile*'. This is from *fascinum,* which means either 'witchcraft' or *membrum virile,* from the amulet of that shape hung round a child's neck to protect against witchcraft. This is a strange error from the erudite La Barre, unless indeed he means to be ironical.

have been discerned, in particular a personal Other whom he strives to obey and placate.

'God' is not a semantic but a phatic term: it does denote or connote anything but expresses the speaker's oedipal constitution, how he feels about the world. Arguments about the nature of God are 'an irrational hurling of individual oedipal convictions at one another'. The god-concept is a relic from infantile narcissism.

Problems and insights of the psychoanalytic approach

I am sure many critiques have been written of this and accounts like it. Mine may be brief and naïve but should be clear.[2]

The sense of omnipotence in babyhood is credible, because a baby is only beginning to recognize the boundaries of the self and is having its wishes gratified on demand. The father as immovable and representing the source of only conditional rewards is more problematical.

Firstly, social fatherhood is not universal, *pace* La Barre (1970a: 12). In western societies one-parent families usually contain only the mother, and, with the dispersal of the extended family and the preponderance of women schoolteachers (disapproved of by La Barre (1970a: 103)), a child may scarcely meet a man until his teens. Of course a strict woman could probably represent the social father, and could even give rise to castration fear. Indeed, Devereux (1980: 231) states that, in an increasingly matriarchal society like the United States when he wrote in the mid-twentieth century, the 'genuine phantasmatic castrator' is the 'phallic mother'. Presumably her motivation for the threat is penis envy rather than omnipotence, and her possession of the latter ought anyway to be incomplete in a boy's view if he knows she lacks a penis.

Secondly, I doubt whether in modern societies, outside abusive families, many little girls or boys have ever witnessed the 'primal scene' or have seen, known or cared much about each others' or their parents' penises or lack of them.

Thirdly, certainly Freud and even La Barre in 1970 wrote before the balance had quite tipped in favour of the feminization and infantilization of western society, a process which has taken place in the last decades of the twentieth century and is ongoing (cf. Devereux 1980: 230-234). I suspect that modern fathers, 'in touch with their feminine side', make few demands of behaviour or performance from their sons and are likely to be indulgent as mothers. Fathers and men in general are in the twenty-first century much less likely to be authority figures in a child's life than they have been in any of the previous five thousand years. The interpersonal landscape of childhood must have been changed considerably by child-centred approaches to parenting and education. If the development of the individual, and particularly his religious development, is much the same *with or without* a 'father' or authority figure in early childhood – in the person of either a strict man or a strict woman – then this theory, predicating so much on the authority figure, has difficulty.

An obvious research project would be to determine whether the most basic religious conceptions of people born since about 1980, many of whom must be the

[2] Admittedly, since I do not 'command' dynamic psychiatry, I ought not to say anything (La Barre 1970a: 49).

product of a child-centred upbringing, are different from those of people who reached adulthood before about 1990, who antedate many of those developments. One would examine the incidence of ideas of God as a father figure, mother figure or something else, of the belief that one can make things happen by magic, and so forth. Of course there are other variables, but some relevant results might be delivered.

La Barre's theory is copiously stated for boys, but sketchily for girls. It is not at all clear how a girl is supposed to become religious, since the father does not figure as so great a threat to her as to a boy, yet religiosity is at least as prevalent among women as among men, and ethnographical literature is replete with accounts of witches and shamanesses.

The claim that the idea of God is generated from the image of the father seems to account for the stern God of the Old Testament and some varieties of Christianity and Islam. I refer to the stern Biblical God as perceived by modern westerners, since Old Testament scholars have long observed that Yahweh has some androgynous features (Robertson Smith 1927: 517). Perhaps even the high gods alleged for primal societies by Lang and Schmidt could be explained this way, although their usually otiose position renders them unimportant for everyday life, whereas one would expect a father deity to figure strongly. However, the claim does not account at all for the polytheism of antiquity, with its often absurd and rogue gods who are not authority figures, or the belief in a multiplicity of frequently nameless and indefinite spirits and an absence of genuine gods found in simple tribal societies. No doubt one can contrive some adjustment. La Barre does refer frequently to Zeus and other mythical figures, but in lyrical phrases which do nothing to resolve this question.

A further problem is that, if the projections which become our gods are the product of our wish to find omnipotence and gratification, there is some reason to expect them to be benign. While deities are often addressed as if they are benign, there tends to be a degree of 'godly fear' in the supplicant, and I should think from the literature on shamanism and ancient religions the majority of supernatural beings are probably imagined as malign or capricious. One could say that a capricious or malign projection accounts for the fact that, as often as not, the deity does not grant our wishes. Certainly, while a god may be projection, it is not the product of *wishful thinking* (Guthrie 1993: 13-14, 74-75).

La Barre (1970a: 48-50) states that there are two objections to the psychiatric (psychoanalytic) study of religion: the methodological (treating cultures like individuals: for example, as being capable of disorientation) and the emotional (the student's refusal to accept the infantile origin of his own religious outlook), and both can be dismissed. I would add a third objection: the ambiguous scientific status of psychoanalytic theory. This question was raised in Chapter 2, with some references. The psychoanalytic theory can account for any conceivable human behaviour. Since it appears that no logically possible occurrence need count as showing that the theory is false – interpretations can always be contrived to save the theory – it ought not to be counted as science.

One can assent to the depiction of the shaman, prophet or priest as deluded when commanding spirits, relaying the commands of a god or supplicating a supposedly external deity. They are deluded because the supernatural beings are

creations of the subjects' own imagination. However, it is not necessary to accept the claim that the supernatural beings are imagined because the subjects are retarded in their psychosexual development. First, the theory itself is problematical, for the reasons given above. Second, other theories to be described below can account for certain individuals' vocation or predilection for the supernatural, and these theories require no distinctions of gender.

There are two separate questions. (1) Is the florid behaviour of some shamans and certain religious behaviour of people generally symptomatic of mental disorder? The answer is probably yes. (2) Do these disorders result from arrested psychosexual development? The answer is probably no.

It is possible to make use of observations and insights regarding abnormal behaviour, interpreted as symptomatic of psychological disorders, without subscribing to the psychosexual theory of the basis of such disorders. The theory of stages of infant psychosexual development, with reference to oral, anal and phallic stages, along with many other original Freudian doctrines, has been discarded by some modern practitioners of dynamic psychiatry (Malan 1995: 205-206). More generally, it is probably useful to follow modern practice of distinguishing between disorders which are demonstrably organic or physiological in origin and those which are non-organic or functional, manifesting only in behaviour and adjustment (Greenfield 1996: 163; Frude 1998: 13-14). For example, obsessive-compulsive behaviour is an organic disorder associated with dysfunction of the caudate nucleus, striatum and frontal lobe, and can be treated successfully with drugs (Carter 1998: 59-63; Frude 1998: 63-64).

La Barre is, I think, correct in saying that a magical or religious (supernaturalist) approach to the world is learned adaptively but used inappropriately (1970a: 117). The supernaturalist approach treats the world at large as being composed primarily of *persons,* entities which can be asked, cajoled, bullied and deceived. In early childhood, adapting to a world of humans who look after us, we learn how to deal with other people. Some of us do not grow much beyond this stage: we fail to recognize that the majority of the universe is inanimate and indifferent to our needs and wants. We continue, inappropriately now, to try to command or entreat, as if the universe consists of or is ruled over by persons, instead of trying to learn the impersonal laws by which it actually operates. In Chapter 7 I propound Guthrie's (1993) theory that human beings, and indeed all animals, are adapted biologically by natural selection to treat the world as animate. We can therefore say that in early childhood our biologically innate personalist approach to the world (Guthrie) is confirmed psychologically by its success in dealing with immediate family in infancy (La Barre). But, if not relinquished in adulthood, it leads to mistakes in interpretation of the world at large, resulting in animatism (Chapter 7).

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